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KANSAS FARMER

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For the improvement  of the Farm and Home

Volume 55, Number 1.

TOPEKA, KANSAS, JANUARY 6, 1917.

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FARM POWER

Items of Interest About Automobiles, Engines, Tractors, and Motorcycles

A great deal of the repair work that is done in the average blacksmith shop is of such a nature that it might well be done at home. Broken castings can many times be drilled and a plate riveted on to hold them together. The welding of mild steel and iron is very simple and with a small amount of practice most men can master the art fairly well. The most useful tool in a shop is an emery wheel, and it is absolutely necessary to have some sort of power other than that of hand or foot to turn it. As for the forge or post drill, they must be turned by hand, but this becomes tiresome and many jobs may be slighted that might otherwise have been finished well had there been some form of power to drive the machine.

A small rip saw in a shop equipped with power will soon pay for itself in the time and money saved in quickly working up broken and split lumber into suitable size for the various farm uses.

The shop engine should be separated from the room where the machinery is set by a tight partition. The dust from the shop or feed grinding room if carried into the moving parts of the engine causes rapid wear.

Winter Use of Cars

To those isolated in many instances from mechanics or garages, the problems connected with operating an automobile during the winter months are often difficult of solution. Cold weather, as a rule, drops down over night and finds many car owners with frozen radiators and a silent motor.

As a simple matter of preparedness, the rural car owner should make a considerable quantity of anti-freeze solution for himself to keep on hand for the cold spell. We all know that freezing results in cracked cylinders, split radiator tubes and a big repair bill. The anti-freeze solution is therefore the cheaper remedy in the long run.

Before placing the solution in the radiator, it is a good plan to thoroughly flush out the system. Use the following solutions for various degrees of severe weather: For zero weather, 3 quarts of glycerine, 2 gallons of alcohol, 4 gallons of water. For 5 below zero, 1 gallon of glycerine, 1 gallon of alcohol, 4½ gallons of water. For 30 below zero, 9 pints of glycerine, 9 pints of alcohol, 4½ gallons of water. We do not suggest the use of alcohol and water without glycerine, as alcohol will evaporate too readily at the temperature of 180 degrees. Never under any circumstances use calcium chloride.

A proper understanding of the choke valve and primer with which most modern cars are equipped, will aid greatly in the starting of the car during the winter months. At night when the car is driven into the garage, the engine should be speeded up rapidly and choke valve advanced as far as possible. This shuts off entirely the supply of air and fills the cylinder with a charge of gas. In fact whenever the car is to be left standing during the day for any length of time it is well to use the choke valve to stop the engine. Then when it is necessary to again start the car, the driver will advance the choke valve toward a "rich" position and press the starter button. When the weather is very severe, and it is impossible to start with the choke valve, the primer should be used. The primer is designed to inject raw gasoline into the cylinder. If the motor will not start, some obstruction is preventing the flow of gasoline from the carbureter, possibly ice. The use of the primer in this case will remove the obstruction.

The use of "bib" or other radiator covers is recommended both as an aid in warming the motor and from the standpoint of gasoline economy. A motometer attached to the radiator to give the temperature is also an excellent thing.

Among the important things to watch in cold weather if the owner is to have the use of his self starter, is the storage battery. A battery should not be subjected to continued periods of cranking. Continued cranking will eventually result in a discharged battery. If your motor doesn't start, find the cause. A

few turns of the motor are sufficient to start.

It is the duty of the generator to supply enough current to compensate for the amount used in general operation. This is not possible in cases where the starter motor has been used extravagantly of the car is not driven a sufficient mileage to take care of the amount used.

Few realize the amount of time required for the generator to recharge the battery. If the starter motor is used one minute in starting, the generator, to restore the charge, is required to operate at a speed of over eight miles per hour for twenty minutes.—H. W. MILLER.

Macadam Revival in New York

A few years ago roadbuilders joined in a universal requiem for the old-fashioned waterbound macadam road. It served its purpose when vehicles were all horse-drawn, it was acknowledged, but with the advent of motor vehicles it was laid aside with the muzzle-loaders, crinolines and other prizes of departed days. But recently the macadam road has come back into favor. This is because road officials are now judging the cost of a road by its total annual expense, including maintenance and sinking fund. On this basis it has been discovered that a macadam road is an economical one for certain classes of travel. This was the opinion expressed at the recent meeting of the New York State Association of County Highway Superintendents by many of those present. Practically all the recent roads built by these men have two courses of broken stone, and frequently it is possible to build the roads with a lower course of cheap local stone, using the more expensive stone from a distance for the upper course only. This reduces the first cost without causing any reduction in the life and strength of the road. When they are finished they are sometimes treated at once with tar or asphalt, but usually this treatment is deferred long enough for travel over the road to reveal any weak spots, so they can be repaired before the oiling is done. It is this development of efficient and economical methods of maintenance with the help of road oils which has led to the renaissance of waterbound macadam in New York. It is one of many recent indications that where the work of maintenance is thoroughly done and cost records of it are properly kept, important light is thrown on the best types of construction to carry travel of different classes and intensities.

Second Tractor Show

The second annual tractor show will be held in Kansas City the week of February 12 to 17, the same week as the automobile show.

The tractor show will be located on the Union Station plaza, as it was last year, but will be much larger. The tent will be 500 feet long, the great weight of the canvas being upheld on steel poles—a new feature. There will be a double wall of ten-ounce khaki, well paraffined, and the use of forty-five salamander stoves will assure comfort regardless of the weather.

Inside the show tent this season there will be a double floor. Practically all contracts have been let for the space. There will be shown exhibits of seventy different models of tractors, in addition to power cultivators, all kinds of new power lift machinery, power lift plows and special binder hitches. The caterpillar tractor, which was the foundation of the wonderful "tanks" which have been of so much note in the European war, will be among the exhibits.

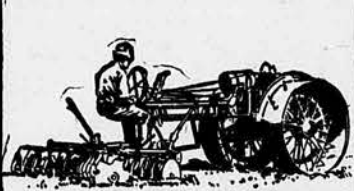
There will be shown tractor attachments for automobiles. A large number of new factories will make their debut as tractor makers, among them some automobile manufacturers of popular-priced cars.

The presence of so much farm machinery in addition to the tractors themselves, will make this show of special interest to implement dealers and farmers of the Southwest.

If an automobile is used only occasionally during the winter, the wheels should be jacked up and the tires partially deflated.



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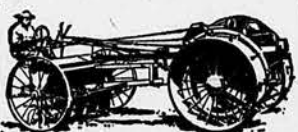
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KANSAS FARMER

The Farm Paper of Kansas

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Member Associated Farm Papers
Editorial, Advertising and Business Offices—Topeka, Kansas

ADVERTISING OFFICES

T. D. Costello, Steger Building, Chicago, Illinois
S. E. Leith, Fifth Avenue Building, New York City
R. R. Ring, Palace Building, Minneapolis, Minnesota
C. A. Cour, Globe Building, Saint Louis, Missouri

Published Weekly by The Kansas Farmer Company at Topeka
Entered at the Topeka post office as second class matter



FARM BUREAUS IN KANSAS

A letter just came to us asking for information about the county farm bureau. The reader wants to know what benefit the farmer will receive from the farm agent, and how a county should proceed to get one. He says they call them "farm advisers" or "farm doctors" in his neighborhood.

The fact that these terms are used in speaking of the man employed by a county farm bureau, indicates that the real scope and purpose of the organization is not very well understood. We have watched the development of the farm bureau work in Kansas from the start and have become fully convinced that it is a most useful organization. We believe it is a factor in the development of better agricultural methods and in promoting rural organizations generally, that merits the consideration of every up-to-date farmer in the state.

Sixteen counties in Kansas had farm bureau organizations last year and during the closing months of the year four additional counties completed their organizations and arranged all the necessary details to starting work with the beginning of the new year. Several other counties are also working to perfect organizations. The membership of these bureaus increased from 1,300 July 1, 1915, to 6,000 December 31, 1916.

In answering our correspondent's questions and similar questions in the minds of many, we cannot do better than quote from a little leaflet recently published telling of the farm bureau work in the state. It answers the question, "What is a farm bureau?" as follows:

"The farm bureau is an organization of farmers who are interested in county-wide agricultural education and rural improvement.

"A committee of farmers representing all parts of the county is responsible for the work undertaken by the bureau, and is assisted, through the county agent, by the agricultural college and the United States Department of Agriculture in the execution of the plans adopted.

"Demonstrations of methods best adapted to local conditions are given; better live stock is introduced; assistance is given to farmers' organizations, breeders' associations, granges, farmers' unions, women's clubs, boys' and girls' clubs, marketing associations, and any other existing farmers' associations in the county.

"The farm bureau is the leader and organizer for improvement in better methods of agricultural practice, farm business, agricultural education, and economic and social welfare."

Here are some of the specific things farm bureaus are doing in our state: Promoting improved methods of crop production, live stock management, plant disease eradication in field, orchard and garden; introducing and studying new and profitable farm crops, better methods of orchard and garden management; arranging and constructing farm buildings; installing farm drainage systems, water supply and lighting systems; making systematic records of the farm business with a view to increasing its profitability; organizing boys' and girls' clubs, and short courses; arranging for farmers' meetings, agricultural tours, and extension schools; promoting breeders' organizations and co-operative sales of live stock; assisting in county and live stock fairs; encouraging community co-operation, and serving generally as a clearing-house for all farmers' organizations.

Farm bureaus in Kansas cost from \$2,400 to \$3,000 a year. This pays the salary of the county agent and the running expenses of the bureau. The funds come from several sources. The members of the farm bureau which shall comprise 25 per cent of the bona fide farmers of the county, or as many as 250, are required to pay a membership fee of not less than one dollar a year. In some bureaus a larger fee is as-

sessed. These fees amount to \$250 to \$500 a year. In beginning the work a special fund of \$800 must be raised in order to provide suitable equipment for conducting the work of the bureau. This is commonly raised by private subscriptions in both country and town. Sometimes business organizations in the towns furnish the whole amount. Federal and state funds have been appropriated and from these \$800 to \$1,200 a year is guaranteed toward the salary of a county agent, providing the county appropriates an equal or greater amount.

The county agent is employed by the bureau from a list of qualified men recommended by the state county agent leader who is located at the agricultural college.

The best way to find out the results possible through organizing a farm bureau and employing a county agent, is to visit some county where this work has been going on for a year or two.

BOARD OF AGRICULTURE PROGRAM

The program for the forty-sixth annual meeting of the Kansas State Board of Agriculture, which will be held in Memorial Hall, Topeka, January 10-12, 1917, follows:

Wednesday, 4:00 P. M., Business session. Evening session: Address of Welcome, Charles H. Sessions, on behalf of the governor; Address of welcome on behalf of Topeka, Mayor Jay E. House; Response, President J. T. Tredway; "A Twentieth Century Vision," A. Ross Hill, president Missouri State University.

Thursday morning: "The Agricultural Fair," W. R. Mellor, secretary Nebraska State Board of Agriculture; "The Federal Farm Loan Act," Charles E. Lobdell, member Federal Farm Loan Board; "The Federal Reserve Bank and the Farmer," Charles M. Sawyer, chairman Board of Directors, Federal Reserve Bank, Kansas City. Afternoon session: "Could Kansas Be a Dairy State?" George W. Marble, Fort Scott; "How to Farm in Kansas, and Why," T. A. Borman, editor KANSAS FARMER; "The Farm Flock for Kansas," A. L. Stockwell, Larned. Evening session: "Rural Permanency," Cora Wellhouse Bullard, Tonganoxie; "The Farmer and His Paper," Charles Dillon, managing editor Capper Farm Papers; "Women and the State Viewpoint of General Federation of Women's Clubs," Catherine A. H. Hoffman, director, Enterprise.

Friday morning: "Relation of Transportation to Agriculture," Z. G. Hopkins, special representative, M. K. & T. Railway, St. Louis; "Fixing the Responsibility for Road Improvement," Thomas H. MacDonald, chief engineer, Iowa State Highway Commission; "Work of the Hays Experiment Station," Charles R. Weeks, superintendent. Afternoon session: Election of officers and members; "The Standardization of Rural Schools," J. A. Shoemaker, Kansas Rural School Supervisor; "The Foot and Mouth Disease," J. H. Mercer, Kansas Live Stock Sanitary Commissioner; "Fire Prevention on the Farm," L. T. Hussey, Kansas Fire Marshal; Query box; Installation of the new board and officers at the secretary's office.

At 6:30 P. M., Friday, a complimentary banquet to those attending the board's meeting will be given by the Topeka Chamber of Commerce, southwest corner Seventh and Quincy streets.

The farmer who is able to present a definite analysis of his business has a decided advantage over the one who cannot give any particulars concerning the results of his work. One of the essentials to commanding capital on liberal terms is the ability to present this sort of information in detailed form. Just recently a farmer of Jewell County had a practical demonstration of this point. A careful survey had been made of his farm business by a man who had given special study to this kind of work. The records showed that of all the farms surveyed in his township he had re-

ceived the highest labor income in 1915, or a little more than \$3,500, the average for the township being only \$554. He needed additional capital to carry on his business and the definite analysis which he was able to present to the loan company furnished just the information needed to guide it in fixing the terms of the loan. Men in commercial business have long accepted this principle and take as a matter of course the requests for information concerning their business made by those who furnish them additional capital. The adoption of approved business methods on the farm will enable the farmer having use for additional capital to secure better terms than he could otherwise obtain.

MANURE WHEAT IN WINTER

It has been abundantly demonstrated that top-dressing wheat during the winter is a profitable practice. This is specially true in the older sections of the state. Land that has been cropped for a good many years runs down in fertility. The amounts of some of the essential elements of plant food become so small that profitable returns are impossible. Manure supplies the lacking elements, and by spreading it on top during the winter the soluble parts are washed out and go into the ground, leaving the coarser material on top where it acts as a protection to the wheat. Later this coarser portion of barnyard manure will decay and yield its manurial value.

Before the advent of the manure spreader it was difficult to apply manure satisfactorily as a top dressing. With the spreader it can be distributed evenly and at whatever rate seems most desirable. Every spreader load will leave its effect on the wheat field and this effect will be noticeable for several years in the crops that follow.

Failure to get barnyard manure back to the soil constitutes one of the big wastes on many farms. A farmer in Nemaha County who built a good dairy barn a few years ago that provided an open shed where the manure was protected from the weather, told us that the fertility saved in this way had been enough to pay interest on his investment in the barn.

The manure spread directly from the stable is worth at least 75 cents a ton more than that which is left for three months in an open yard before spreading.

HOME CURING OF MEAT

Every farmer in Kansas ought to kill and preserve his own meat. No packing-house product can equal home-made country ham. On farms from which the finest of cattle and hogs go to market, it would seem that the farm family should have the best of meat for home use.

In the days before the packing house, butchering time was an annual event. The animals were carefully fed with this end in view and the meat was preserved so as to be far superior to what we ordinarily buy at the present time. Many of the industries that were formerly carried on in the home are better and more cheaply conducted in the factories, but no farm family should have to buy ham or bacon in order to have good meat on the table.

Butchering and curing meat successfully is an art that can be acquired. It requires care and attention to details, but so do many other things that are done on the farm. We of the present generation have found it so easy to buy meat already prepared, that little attention has been given to home methods of meat preservation. We need a revival of the old-fashioned butchering day.

Not only is it possible to have better meat, but much needless waste can be saved. In buying meat at the store, a profit is paid to the local shipper, to the packer, the retail grocer, and a double profit to the railroad which hauls the live animal to the central market and the meat back again.

PLAN CROP ROTATIONS NOW

Head work is an important part of successful farming. From the fact that conditions are never exactly the same, there has perhaps been a tendency to let things drift and not try to plan, because so frequently plans have to be changed to fit changed conditions. These things make it even more important that the man who labors with Nature, carrying on his work in harmony with her laws, be resourceful and ever ready to take advantage of opportunities as they present themselves.

Even though it is impossible to work out detailed plans, as can be done in some occupations, there are certain general fundamental principles entering into the farming business that must be considered. The evils of any single crop system have been brought out by the steady decline in the yield of such staple crops as corn, where this practice has been followed. In every corn county in Eastern Kansas the records show that the yields have steadily fallen off for a thirty or forty-year period. The Missouri Experiment Station has just reported a test covering seventeen years in which corn grown continuously on the same land has averaged less than twelve bushels an acre, as compared with about fifty bushels an acre on ground planted to corn, wheat and clover, in rotation, and about fifty-four bushels where the rotation was corn, oats, wheat, clover, and two years of timothy.

The necessity for a good rotation in cropping is fundamental and some time might be most profitably spent this winter in working out rotation plans that will fit the farm and result in giving greater returns for the labor expended. A good rotation should include some cultivated crop, then there must be a crop that adds nitrogen and organic matter, such as alfalfa, clover, cowpeas or sweet clover. Plowing under some of these legumes for green manure brings immediate results in adding organic matter and thus increasing fertility. Usually a small grain or grass crop is included in a good rotation. It naturally follows that a rotation plan must include live stock to consume the greater part of the crops grown. While different kinds of crops make different demands on the soil so that crops in rotation wear out land less rapidly than a single crop grown year after year, no rotation can build up a soil unless the greater part of the products is fed on the farm and the manure returned to the soil as a part of the rotation scheme. In some cases it may be necessary and profitable to add lime and phosphates in addition to returning the barnyard manure to the soil.

TEN EYCK TO NEW POSITION

A. M. Ten Eyck, who is well known to many of our readers through his work at the agricultural college, has become head of the Emerson-Brantingham agricultural service bureau which has just been established. Professor Ten Eyck was reared on a farm in Wisconsin and has always been associated with agricultural work. He spent ten years in Kansas as professor of agronomy at the agricultural college and three as superintendent of the Hays Experiment Station. He is the author of a number of valuable bulletins on crops and soils. During the time spent at Hays, Professor Ten Eyck made some valuable investigations in dry-land farming. He made many public addresses while in Kansas and became familiar with farming conditions all over the state.

Previous to taking up this new work, Professor Ten Eyck was county agricultural agent of Winnebago County, Illinois, where his efforts to improve agricultural methods were much appreciated.

The purpose of the new department which he heads is to furnish all the help possible to the patrons of the implement company.

FIGHT CONTAGIOUS ABORTION

Isolate and Treat Affected Animals, Disinfect Bulls, Clean Up Premises

ABORTION is insidious. It creeps in like a thief in the night, and it is not always an easy thing to trace. New animals, whether male or female, purchased from an affected herd, or a cow served by a neighbor's bull which has become affected, or contact with diseased animals in other ways, may be the means of introducing the disease. Take warning, therefore, and protect your herd from this destructive disease.

CAUSES OF ABORTION

In Circular No. 14 of the Kansas Experiment Station it is stated that the terms, "slinking," "casting," "losing," "aborting," etc., are used in discussing this trouble, the idea being conveyed that the young is cast out of the womb before it is fully developed and capable of separate existence.

"Abortion may be brought about in many ways. The principal causes probably are injuries to the mother from fighting, falling, kicks from other animals, drinking excessively of very cold water, exposure to severe or sudden changes in the weather, and the eating of spoiled, frozen or moldy foods, especially wheat or rye, which contain ergot or smut. Improper hygienic surroundings also contribute, especially in stabling, breeding too young, inbreeding, and severe constitutional diseases. The death of the fetus itself is at times responsible.

"When any of the accidental or explainable causes cannot be assigned to the case, contagious abortion is always to be suspected, for it is common in this state and easily spread from one animal to another. The failure of many mares and cows to breed may often be attributed to this trouble. The diseased animals are often able to infect those with which they associate, so it is readily seen that the immediate loss of the young animal is not the only loss sustained by a herd in which this disease may get a foothold. It frequently results in many months of sterility or possible loss of increase completely, as well as infection of new herds or animals replacing the old herd.

"There can be no doubt of the fact that the disease is of germ origin, or infectious, as we more properly say. The fact that it spreads rapidly from one animal to another, and that, experimentally, it can be produced by the introduction of the discharge of an affected animal into the vagina of a pregnant animal, both conclusively prove this point.

"The germs of the disease are found in the vagina and uterus of affected animals and are passed out with the discharge from these organs, therefore the membranes and discharges from a case of abortion should always be buried, burned or thoroughly covered with a strong and efficient disinfectant.

"This is one disease where it is obvious that prevention is worth vastly more than an attempt to cure, mainly because the trouble is as a rule not suspected to be present till it has occurred, therefore treatment is directed to those animals supposed or known to be affected, and the known exposed ones."

Is your herd already affected? If so, you have some work ahead of you. But don't quit on that account. Abortion has been and can be controlled by thorough and intelligent treatment. It is not a lazy man's job, but by careful attention to details of sanitation and hygiene and the control of breeding the disease can be overcome.

Don't waste your energies on unprofitable animals. Send the boarders to the butcher; then give your attention to the good cows. "An ounce of prevention is worth a pound of cure." Clean up the stable, put in windows and let the sunshine in, then give a liberal coating of whitewash, so that you can see if there is any dirt. Drain the barnyard and make everything clean and sanitary.

CLEAN AND DISINFECT STABLE

Chemical disinfectants are used to good advantage in controlling disease and the following directions for their use are given in a recent bulletin of the Federal Department of Agriculture: Sweep ceilings, side walls, stall par-

National Campaign Against Abortion

ABORTION is fast becoming the most destructive of all animal diseases. It hits animal production at its very source. If the offspring are killed and cattle cannot reproduce, we get neither beef nor milk. The necessity is plain for vigorous action to prevent such a calamity.

The Federal Bureau of Animal Industry is making a determined effort to devise a method of treatment which will be effective in controlling this serious disease. Are you doing your part? The bureau asks your help. An appropriation has been made, but not enough to provide individual attention for all infected herds.

Write to the Experiment Station at Manhattan, not only to ask for aid, but to offer your assistance in a systematic campaign to control the disease. Also write to the Division of Publications, Department of Agriculture, Washington, D. C., for their latest bulletin on contagious abortion.

titions, floors, and other surfaces until free from cobwebs and dust.

Remove all accumulations of filth by scraping, and if woodwork has become decayed, porous, or absorbent, it should be removed, burned, and replaced with new material.

If the floor is of earth, remove four inches from the surface, and in places where it shows staining with urine a sufficient depth should be removed to expose fresh earth. All earth removed should be replaced with earth from an uncontaminated source, or a new floor of concrete may be laid, which is very durable and easily cleaned.

The entire interior of the stable, especially the feeding troughs and drains, as well as milking stools and all other implements, should be saturated with a disinfectant, as cresol compound (U. S. P.), or carbolic acid, six ounces to every gallon of water in each case. After this has dried, the stalls, walls, and ceilings may be covered with whitewash (lime wash), to each gallon of which should be added four ounces of chloride of lime. The disinfectant, of course, should be rinsed thoroughly from drinking troughs before animals again drink from them.

All refuse and material from stable and barnyard should be removed to a place not accessible to cattle or hogs. The manure should be spread on fields and turned under. In addition, the yards should be disinfected by sprinkling liberally with a solution of copper sulphate, five ounces to a gallon of water.

The best method of applying the disinfectant and the lime wash is by means of a strong spray pump, such as is used by orchardists.

This method is efficient in disinfection against most of the contagious and infectious diseases of animals, and should be applied immediately following any

outbreak, and, as a matter of precaution, it may be used once or twice yearly.

To prevent the bull from carrying the infection from a diseased cow to a healthy one, first clip the tuft of long hair from the opening of the sheath, then disinfect the penis and sheath with a solution of one-half per cent of cresol compound, lysol, or 1 per cent carbolic acid, or 1 to 1,000 potassium permanganate in warm water. Two tablespoonfuls of fluid equal one ounce, therefore this amount of antiseptic added to six pints of boiled water will make approximately a 1 per cent solution.

The only apparatus necessary is a soft rubber tube $\frac{1}{2}$ inch in diameter and 5 feet long, with a large funnel attached to one end; or an ordinary fountain syringe and tube would serve the purpose. The tube should be inserted into the sheath and the foreskin held with the hand to prevent the immediate escape of the fluid. Elevate the funnel as high as possible and pour in the fluid until the preputial sac is filled. In addition to this, the hair of the belly and inner sides of the thighs should be sponged with an antiseptic of twice the strength of the irrigating solution. This disinfection should invariably precede and follow every service.

TREATMENT OF THE COW

Isolate the aborting cow. The germs of the disease are contained in the discharge, and in the dead fetus and its membranes. Gather these up and bury or burn them and disinfect the stall thoroughly. Don't neglect this cow. By thorough treatment you can restore her to usefulness and prevent sterility.

More than half the cows abort but once, so don't sell your cow because she aborts.

The uterus should be irrigated daily with one of the antiseptics mentioned

for the bull, using the same apparatus, and irrigation should be continued until discharge ceases. If large numbers of animals are to be treated, a bucket can be fitted with a small faucet to which the tube is attached. This can be suspended from the ceiling or from the rail of the litter carrier. After treating the animal, disinfect hands and apparatus thoroughly with the solution before treating another animal. Complete cleanliness is important. Lugol's solution, in a strength of 2 per cent, has been found to be desirable as a uterine douche. This solution is not allowed to remain in the uterus, but is flushed out with salt solution.

Lugol's solution of iodine is compounded as follows: Iodin 5 parts, potassium iodide 10 parts, and boiled water to make 100 parts. Two parts of this compound in 100 parts of boiled water make a 2 per cent solution suitable for uterine irrigation. Lugol's solution can be purchased from your druggist.

A 1 per cent solution of common salt in boiled water at body temperature makes a suitable irrigating fluid. A heaping tablespoonful of dry salt weighs approximately one ounce, and this amount in one gallon of boiled water gives the proper strength.

The action of the antiseptic should be noted, and if it causes straining or irritates the tender membranes of the genital organs, a weaker and less irritating solution should be used. In addition, the external genitals, root of tail, escutcheon, etc., should be sponged daily with a solution twice as strong as that used for irrigation, and this latter treatment should be given the non-aborters as well. Should the preliminary symptoms of abortion be detected, the animal should be removed from the herd and treated as above.

After treating an affected animal, be careful to disinfect hands before going near apparently healthy animals.

RETENTION OF AFTERBIRTH

The retention of the afterbirth is a serious matter. It should not be forcibly removed, as the lining membranes of the uterus would be torn and a point of entry thus provided for the germs which cause blood poisoning. The uterus is very susceptible to this form of infection at such times, and injury should be carefully avoided. Clumsy and forceful manipulation of the parts may cause infection and death of the animal. The best practice is to flush the uterus twice daily with a mild antiseptic to prevent the accumulation and absorption of poisonous product and allow the membranes to come away of themselves. In all these manipulations, hands and utensils should first be thoroughly disinfected. In fact, so much special knowledge and operative skill is required that a competent veterinarian should be employed to instruct the owner before these operations are undertaken.

BREEDING AFTER ABORTION

After abortion, breeding should not again be attempted within two months, or until the discharge shall have ceased, as the uterus would not be normal and the animal either would not conceive or would abort again in a short time.

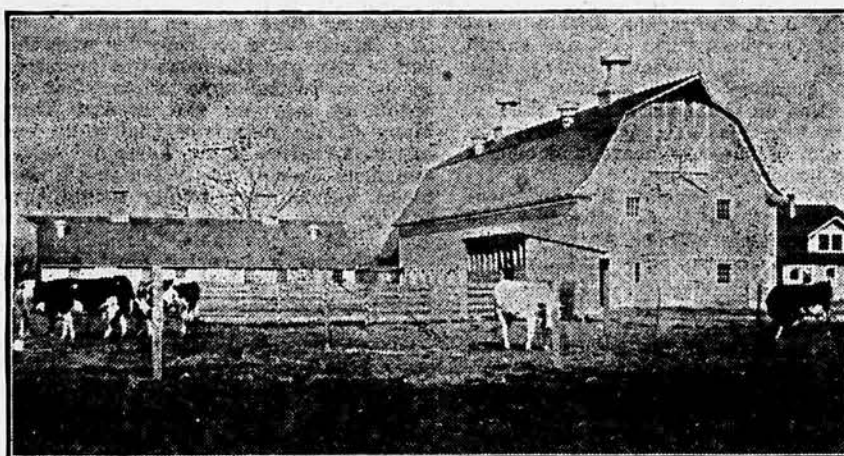
Sterility, weakling calves, retained afterbirth, white scours, and calf pneumonia frequently accompany abortion. The measures recommended will also assist in overcoming these complications.

Do not rely on drugs or proprietary medicines administered by the mouth. No effective remedies of this kind have yet been found.

Serums and vaccines are still in the experimental stage. Their effectiveness, however, has not yet been conclusively demonstrated. The Department of Agriculture advises farmers to rely for the present on the protective measures and sanitary treatment outlined above.

Let us repeat. Give this matter your earnest attention. Join your neighbors, your state, and the country in fighting this plague, and we will soon have it under control.

Write today to the Department of Agriculture for the Farmers' Bulletin, which gives details of the disease and its prevention and treatment.



DAIRY BARN ON FARM OF GEORGE C. TREDICK, KINGMAN COUNTY, KANSAS.—LARGE BARN HAS FORTY STALLS, A BULL PEN AND SEVERAL BOX STALLS.—SMALL BARN HAS THIRTEEN CALF STANCHIONS, FOUR SMALL CALF PENS AND THREE BOX STALLS FOR CALVING COWS.—EQUIPPED WITH MILKING MACHINE AND FEED AND LITTER CARRIERS RUNNING FROM SILOS TO EACH BARN

IMPORTANCE OF CLUB WORK

Will be Reflected in Improved Farming and Home Life of Next Generation

By W. D. HURD, Director of Extension, Massachusetts Agricultural College, Before National Association of Agricultural Colleges

THERE have been many criticisms made of our public school system—some just, some unjust. It has been said, and generally agreed to, I think, that most of the subject matter taught has been abstract—unrelated to life, the home, and other interests of the child. Methods and subject matter have not resulted either in leading in the direction of the farm those in cities who are adapted to the farming vocation, or in keeping on the farm those brought up on farms and better fitted for this than for other vocations. The nature study craze, and the idea of wholesale teaching of elementary agriculture have not accomplished what was expected of them except perhaps to lead toward the saner and more practical ideas that are now being put into practice. The school, except in rare instances, still stands as an isolated institution, disconnected with the life of the community in which it exists. The gulf between the home and the school has not been bridged with any span yet proved to be permanent. Boys and girls from farm homes still continue to grow up with an actual distaste for farming and rural home life. The past history of the attempts made to teach agriculture in our public schools has not been flattering. Young people who ought to stay on the farm continue to go to the city—and I make no attempt here to define the theory that all farm-born children should be farmers. Conditions of soil fertility, financial return from farming, social life, methods of marketing, and all-round contentment in rural districts over the country as a whole do not seem to be improving very rapidly. Various other agencies, such as scouts, campfire girls, Y. W. C. A. groups, etc., are doing the work formerly looked after by parents and which might have been attached to the school.

The junior extension work movement is a natural outgrowth of the nature study and elementary agriculture idea. It is more real, more vital, has an element of financial profit in it, the competitive element gives zest and interest, and agriculture is now taught without being left, as formerly, without effective application. The sole reason for developing the club work idea is to teach agriculture, not to promote prize contests or to over-emphasize the material side—although these may serve a good purpose in reaching desired ends—and it is accomplishing in a remarkable degree, this purpose.

The best argument I know for the value of club work as a real educator of boys and girls is to be found in the attitude of bankers and other business men, usually rather callous to movements of this kind. In our state, as in others, they have not been slow to see exceptional value in it, have been willing to spend thousands of dollars personally to further it, and have heartily endorsed it both privately and in public.

To be most successful and most valuable, the club work should be developed either as a part of the school system or as a very close adjunct to it. Adequate supervision and follow-up work are absolutely necessary. It's not how many register in the spring that counts, but how many come through with completed projects in the fall.

No boy or girl can carry on a club project lasting four months, or a full season, and perform all the necessary duties faithfully so that recognition is gained and admission is allowed into the group of successful contestants without coming in contact with and absorbing many things that really educate. He or she cannot plow and prepare the soil, or care for poultry, or pigs, or make a garment, or bake a loaf of bread, or go through the process of canning fruits or vegetables, or practice drainage when necessary, or mark out the rows in a garden, or select seeds and fertilizers, or combat insects and diseases, or clean up the back yard prior to gardening operations, or receive the benefits of travel to the nation's capital or to places of interest in their own state, without coming in contact with scientific facts, whether they recognize them as such or not, and having lasting impressions made upon them; without being broadened by the business men with whom they come in contact; without learning to take bravely discouragements due to climate, rain, or other causes; without recognizing the



THIS FORM OF EXERCISE BRINGS HEALTH, PLEASURE, AND GOOD RETURNS FOR PRODUCTS GROWN.—MANY KANSAS CLUB BOYS AND GIRLS TEND THEIR PLATS IN A WAY THAT WOULD DO CREDIT TO EXPERIENCED HANDS IN THE BUSINESS

need of co-operative relationships; without learning to respect the rights of others; and without learning lessons in community work. They will be spurred on by the competitive spirit, will be more keen and observant, and will find expression of their thoughts in the final report which they must render. In club work the boy or girl either fails to come through, or else when they do, it is with all the exhilaration of overcoming obstacles and of winning something which is much worth while. It's a real man's job that they have accomplished.

Examples and instances are not scarce of how organized club work has had a remarkable effect on the career of those participating, their parents and neighbors, and generally the community in which the work goes on.

Organized either as a part of or as an adjunct to our school system, clubs con-

nect the school with the home, this being the only link that has so far been found. They inject a vitalizing element into the school itself. Subjects taught in the school become at once associated with real things outside. The school becomes a part of the community. Club work activities become the feeders for agricultural schools and colleges.

The effect of club work on club members must not be lost sight of. Boys and girls learn to work, they learn to discriminate, they learn to co-operate, they learn to describe what they do, they learn business methods, they learn to weigh and balance things according to real values, they are encouraged to read and discuss, they are broadened by their contact with others, they develop initiative and judgment, they come to the age of eighteen or nineteen able to do something with a knowledge of how, and

the confidence that they can do it. Club work gets hold of boys and girls at the right stage of their development for directing or redirecting their thought.

Club work is proving to have a great effect on farming and home making—the two goals to be reached. Corn, potato, pig, poultry, calf, and other clubs, conducted on scientific principles, introduce better farm practices and make for better farming, as can be instanced by examples in every state where such work has been carried on.

Canning, garment-making, bread-making, and other clubs associated with home economics, are bringing back into our homes almost lost arts.

The various kinds of clubs carry either to the farm or to the home those things which we are condemning our school system for leaving out.

The route back to the farm is paved far better with the subjects taken up through the club work than by the way of Greek and Latin.

An element that should not be overlooked is that under our present system of organization and supervision all these educational values may be had with little and in many cases no cost to the local community, a fact not to be overlooked in the day of high tax rates under which many of our smaller towns are struggling.

Most of this work, too, is outside of the traditional course of study and recognized classroom standards, but that it is truly educational is, I think, proved by the product turned out.

Have I put too great a value on this junior extension work in its relation to the existing school system, and have I shown too much enthusiasm for it? As one not actively engaged in the actual work of organization and supervision, but who is in sufficiently close touch so that I can see its real workings day by day, I have felt that no other movement—at least none with which I have been in contact—contained such possibilities.

I have not held it up as a panacea, not offered it as a remedy for any of the existing ills of our educational system. It simply stands for what it is worth as one movement.

But in presenting this subject I have been thinking of the boys and girls with whom I come in contact, full of strength, energy, enthusiasm, keen of eye, eager to tell of their accomplishments, which can only be felt by personal work and actual achievement. I am thinking in the terms of the teacher and the school superintendent as they act as leaders in this work, of their enthusiasm for it and their testimony as to what it brings into the school system. I am trying to foresee what the ultimate effect of this work will be, when developed further and to the point it ought to be, through the co-operation of federal, state, county, district and local agencies, on the agricultural industry of this country.

The results are still invisible and intangible, but we will all agree, I am sure, that work done with the coming generation will count most, and it is at least safe to say that boys' and girls' agricultural club work carried on today will be reflected in a new and improved farming and home life twenty-five years hence.

The Crop Reporting Board of the Bureau of Crop Estimates of the United States Department of Agriculture reports that the area sown to wheat this fall is 2.3 per cent more than the revised estimated area sown in the fall of 1915, equivalent to an increase of 887,000 acres, the indicated total area being 40,000,000 acres. Condition on December 1 was 85.7 against 87.7 and 88.3 on December 1, 1915 and 1914, respectively, and a ten-year average of 90.2.

Arrange your poultry house so that most of the cleaning can be done with a broom. To do this, keep the floor well covered with dry earth and when the house is to be cleaned, simply sweep off the floor and scatter fresh earth, using an extra quantity under the roosts. In this manner the work can be done in a few minutes and the droppings can be placed in barrels and the earth will assist in preserving them. Dry earth is one of the best absorbents and deodorizers that can be found.

Prisoners Work on Farm

By BAGDASAR K. BAGHDIGIAN

A large amount of produce is raised on the Kansas State Penitentiary farm at Lansing, but only about 21 per cent of the vegetables consumed by the inmates. Last year the value of the produce amounted to \$15,017.72.

It is planned to increase the number of acres of cultivated land, thereby decreasing the running expenses of the institution and opening more opportunities for trusty prisoners to work outside.

This year 209,668 pounds of vegetables were raised on the farm. This included green peas, cabbages, beets, turnips, green corn, cucumbers, lettuce, pumpkins, squashes, radishes, rhubarb, and tomatoes. In addition 1530 bushels of both sweet and Irish potatoes and 182 gallons of blackberries were produced. The milk supplied during the year by the 44 high-grade Holstein cows was 33,666 gallons. The amount of beef produced was 34,100 pounds, pork 40,590 pounds, poultry 598 pounds, and 923 dozen eggs.

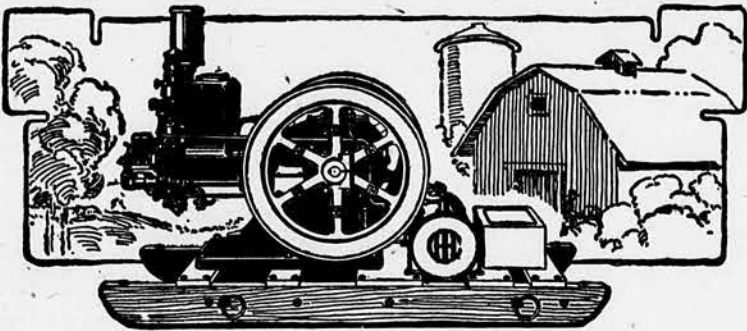
Of the 1,920 acres of land only a little over 640 acres is in cultivation. The rest is in pasture. This year 250 acres was in corn, 30 in sorghum for molasses, 50 in corn for fodder and silage, and 20 in watermelons and cantaloupes.

Nine teams and 45 men do all the work of the farm. It is managed by up-to-date methods. Each day the men are assigned to their work and given definite instructions. Under the kind supervision of the farm superintendent, Mr. Dews, the inmates perform their

tasks willingly and cheerfully. Hardly ever there is a complaint on the part of the "convict farm hands." Their work is assigned according to trust and ability.

Through a well planned rotation of crops the land is either improved or kept in its normal state of fertility. Some commercial fertilizer is used and a great deal of green manure is turned under. Many of the inmates show a decided interest in farming. Twenty of them are enrolled in the correspondence course in agriculture offered by the Kansas Agricultural College. Those who do study the various phases of farming have splendid chances to learn the practical side of it during the summer under Mr. Dews, who is a thoroughly practical farmer and stockman.

The land on the island, in the Missouri river, is being improved by clearing the timber, this being used for mine props and other uses in the institutions. Oxen raised on the island are being used to plow this cleared land. The twenty acres of watermelons and cantaloupes were raised on the island. A trusty prisoner was given a shot gun to keep the crows off the melon patches. He was there months at a time. Visitors always carried a good word for him to Warden J. K. Coddington who is always pleased to hear favorable reports about his "boys." There are other trusty prisoners who work on the island looking after the different crops. The corn raised on the island is stored in a large silo. Two other silos are found on the farm proper.



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Eight years ago the Cushman Motor Works designed a new type of farm engine weighing about one-fifth as much per H. P. as other farm engines, but so well built, balanced and governed that it ran more steadily and quietly than a farm engine was ever known to run. Some people laughed, and said that a 4 H. P. engine weighing only 190 lbs. must be a toy, but when they saw the Cushman at work beside heavy engines weighing five or six times as much, they realized that weight does not mean power, and that the Cushman is a giant in power for its size.

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Cushman Engines have Throttle Governor and Schebler Carburetor. Insuring regular speed even on jobs of irregular loads, like sawing. Their perfect balance also helps to make them steady, insuring unusual durability and freedom from engine trouble.

The 4 H. P. and the 8 H. P. are mounted on trucks, if desired, and may be pulled around by hand. These are very useful engines, as besides doing all work heavy engines do, they may be attached to machines in the field, as 4 H. P. on grain and corn binders and 8 H. P. on hay balers. All over 4 H. P. are double cylinder, giving steadier power.

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The Government this year is asking farmers to put increased acreage into grain. Military service is not compulsory in Canada but there is a great demand for farm labor to replace the many young men who have volunteered for service. The climate is healthful and agreeable, railway facilities excellent, good schools and churches convenient. Write for literature as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

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Canadian Government Agent.

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LIVE STOCK

Conference on Sheep Production

THERE has been a general decline in the wool and sheep industry of the United States. Manufacturers of woolen and worsted goods report a great shortage in their supply of raw material. They need annually 600 million pounds of wool. Wool production in the United States has decreased in the past five years from about 325 million pounds annually to 288 million pounds. The world's wool supply has been effected by the war. In Australia and New Zealand, flocks have been reduced in size. In Argentina there has been a decline and it is reported that the wool they have on hand is being purchased by European interests for use after the war.

In view of these facts a conference was held in Philadelphia in November, which was participated in by farmers, manufacturers and many others interested in promoting a greater production of wool and mutton in this country. As a result of the discussions the following recommendations were prepared and adopted as resolutions:

1. That the present possibilities for profitable sheep raising make it advisable that the breeding flocks be conserved with the greatest possible care.

2. That the growing of mutton and wool be encouraged by every available means.

3. That a program for affording this encouragement be developed which recognizes the interests of all concerned.

These recommendations are made in the belief that the sheep-raising industry, if properly undertaken and conducted, will be immediately profitable to the American farmer.

A definite program was suggested which included a plan for securing the co-operation of the Federal Department of Agriculture, the state departments of agriculture, the agricultural colleges, the railway development departments, the sheep breeders' associations, the bankers' associations, and the commercial and manufacturing interests handling wool.

This movement for increasing sheep production suggests an opportunity in live stock farming that is now open. Sheep can be made most profitable on many of the farms of Kansas and at the present time there are exceptional reasons why they should be considered.

Wormy Horses Do Not Thrive

Many horses get out of condition, or fail to make gains during winter months because they are infested with worms. This is especially true of colts. Horses suffering from worms generally have a good appetite, but apparently benefit little from the food eaten.

There may be no symptoms which point conclusively to worms, but this trouble is so common that if the colts and horses are not doing as well as they should for the feed given, a worm remedy may prove of decided value. In treating horses for worms, Dr. L. S. Backus, of the Missouri College of Agriculture, suggests, it is well to keep in mind that the drug is meant for the worm rather than the horse and should therefore be given in as concentrated a form as possible. To insure this, little or no bulky food should be fed during the course of treatment, and as the parasites are stupefied by worm remedies rather than killed, the animal's bowels should be kept in an active condition so that the stupefied worms may be passed out before they regain their vitality. A well salted bran mash once a day will generally insure such an action.

The following formula is a worm remedy which is also of value as a tonic: Powdered nux vomica, 2 ounces; powdered gentian root, 4 ounces; powdered area nut, 6 ounces; sodium chloride (common salt), 4 ounces; arsenious acid, 2 drams. Mix.

Give one heaping teaspoonful to every 250 pounds weight, every morning and evening for about ten days. The medicine may be mixed with ground feed or sprinkled over oats or corn which has been dampened.

Notice to Stallion Owners

All stallions that are used for public service during the year 1917 must have a 1917 license, which means that all stallions that had licenses for 1916 must have them renewed for the year 1917,

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THE SILVER MFG. CO.
Box 352 Salem, Ohio

and all stallions that were not licensed during the year 1916 must have new licenses for the year 1917.

I most earnestly urge that stallion owners make application for licenses at once. Nearly every year the majority of owners wait until near the opening of the season to make application for licenses, and this results in unavoidable delay.

Make your application early and avoid all delay.—C. W. McCAMPBELL, Secretary Kansas State Live Stock Registry Board.

Wichita Live Stock Show

The annual convention of the Kansas Live Stock Association, commonly referred to as the cattlemen's convention, is one of the big annual events in Kansas. A stock show is to be held in Wichita at the time this association holds its next annual meeting, the date being February 26 to March 3.

The Kansas National Live Stock Show Association has recently been organized to conduct this show, which will be one of a three weeks circuit of spring shows, Oklahoma City and Ft. Worth following in the order named.

The officers and board of directors of the show association include some of the most prominent, progressive and responsible men in Kansas.

The packing houses are represented on the board of directors by Fred W. Dold, general manager of the Jacob Dold Packing Company, and J. G. Irwin, general superintendent of the Cudahy Packing Company. The Live Stock Exchange is represented by H. E. Newlin, vice-president of the Union Live Stock Commission Company, and J. E. Wood, general manager of the Standard Live Stock Commission Company. The Union Stock Yards Company is represented by its general manager, Dan C. Smith, and its secretary, C. C. Miner. The finances are handled by F. T. Ransom, president of the Union Stock Yards National Bank and vice-president of the Wichita Cattle Loan Company. The cattlemen are represented by W. J. Tod, president of the Kansas Live Stock Association, the strongest association of its kind in America.

One of the main purposes in holding this stock show is to increase the interest in better live stock and to furnish entertainment for the members of the Kansas Live Stock Association who attend their annual convention at Wichita during the same week, all members being admitted free.

The full payment of all premiums and expenses are guaranteed by the Wichita Stock Yards Company and the Wichita Live Stock Exchange.

The show will be held in the Wichita Forum, a modern exposition building, located in the central part of the business district of Wichita. It is equipped with steam heat, electric lights, city water and sewer, opera chairs for 5,000 people, and an exhibition arena—90 x 150 feet, also nicely arranged rest rooms for ladies and children.

The annex has stable room for 800 head of stock, with switch and platform, where all stock can be unloaded direct into the building, all under one roof, where the show will be held rain or shine.

The premiums offered on Shorthorn breeding cattle amount to \$1,000, with a like amount on Hereford cattle and Percheron horses, and \$500 on Poland China and Duroc hogs. Competition is open to the world, and every breeder in America is cordially invited to exhibit his stock at this exposition.

There will be a sale of pure-bred live stock of the various breeds each day of the show, all breeders who have first-class pure-bred stock will find this a splendid place to dispose of their surplus.

The general manager, F. S. Kirk, has opened an office in the Live Stock Exchange building and will furnish the official premium lists and entry blanks to any one on request.

Before beginning to milk, brush the cow's sides, wash her udder and teats carefully or wipe with a damp cloth, and milk with dry hands. Milk comes from the cow in a pure and clean state. Impurities that get into it are due largely to the thoughtless acts of the people who care for and handle the milk.

Farmers will find flaxseed the most profitable crop. More money in it than wheat. Booklet from Fredonia Linseed Oil Works, Fredonia, Kan.—(Adv.)

Don't wait to put in IDEAL heating!

It is a mistaken idea to think that you have to wait until warm weather to put in an IDEAL Boiler and AMERICAN Radiator outfit.

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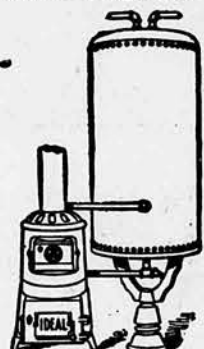
AMERICAN & IDEAL RADIATORS & BOILERS

The piping connecting the IDEAL Boiler with AMERICAN Radiators is readily run up through corners of the rooms, closets or out-of-the-way places, and the outfit may be completed in a few days to your utmost satisfaction. You will then notice the striking contrast between the chills and cold of old, wasteful methods, and the

sure, economical heat aplenty from the IDEAL-AMERICAN outfit, making you glow all over with satisfaction.



A No. 4-19-W IDEAL Boiler and 270 ft. of 38-in. AMERICAN Radiators, costing the owner \$200, were used to heat this farm house. At this price the goods can be bought of any reputable, competent fitter. This did not include cost of labor, pipe, valves, freight, etc., which vary according to climatic and other conditions.



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Don't buy an engine of any make or kind until you have seen my new 1917 prices and read my free book. It tells you the truth about engines of all kinds. If interested mention engines on a postcard and I'll send you this great book by return mail. Our engines not overrated.

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THE WM. GALLOWAY CO., Farm Implement Manufacturing Specialists, Box 217 Waterloo, Iowa

Kansas Farmer Dairy Club

Are You Doing Your Part?

YOUR standing in the club does not depend on any one thing. We remind you of this because some members have done exceptionally well on certain points and not so well on others. The one who has the highest producing cow may not stand at the top when the different points are averaged at the close of the year's work. You should not become discouraged because some other member has a cow that is making a bigger record than yours. Remember that not only cows, but boys and girls as well, are making records. You cannot help it if your cow does have less capacity for production than some other member's cow has, but you are responsible for what you do yourself.

The profit you make will to a considerable extent depend on the amount of thought you put into feeding your cow a ration that will not only produce a large quantity of milk but be economical as well. The manner in which your records are kept is entirely in your own hands. If you do careless work no one is to blame but yourself. The quality of the milk and cream produced is likewise a point that will depend upon your skill and care in milking and handling the product.

Perhaps some may have forgotten the basis upon which your standing will be determined. First comes the total production for the year, and 30 points are allowed for this. Someone may win the full thirty points. Then comes the profit over cost of feed and interest, also allowed 30 points. It is quite possible that the high score on this point will not go to the one making the best production record, although as a rule the heavy producing cows are also profitable producers if properly fed. The members with high-priced cows have had heavier interest to meet, and this enters into this point. Twenty points are allowed for records and the story of the year's work. Here is a chance for you who have poorer cows, to even things up by doing your work so carefully that you will receive the full 20 points. Accuracy, getting your records in on time, and the neatness of the records themselves, will be considered. Some members will come considerably short of getting the full twenty points, while others will grade high. All can improve their standing in this point by striving to do better work for the balance of the year. There is perhaps even a greater difference in the way the records are being kept than there is in the capacity of the cows. The story of your year's work which you will be asked to write, will also be considered with your feed and milk records.

As yet, no steps have been taken to learn anything about the quality of the product you are producing, but you will have a chance to win twenty points on this before your year's work closes. Learn all you can about producing good milk and cream and put your knowledge into practice. It is good to know these things because you can put it into practice later and it will stand you in good stead when your milk is inspected as it will be before the year closes.

With these four things entering into the placing of the final honors, no member needs to feel discouraged. Do the best you possibly can in those points for which you alone are responsible. No one has as yet an assured grasp on the highest place.

Both Feed and Butter Fat High

We are glad to see the good results our dairy club members are showing for the winter months. The records show that the cows are making good returns for their feed.

Present feed prices seem very high, but prices for butter fat are just as high, and there is only one rule to follow when you are wondering if you can afford to buy feed for your cow. Study your feed and milk records carefully and see if your cow is using her feed for making milk. If she is, you can afford to buy enough milk-making feed to keep her right up to her capacity, for you are receiving prices for the butter fat to warrant you in making her produce all the butter fat she is built to produce.

It is highly profitable to feed \$10 worth of feed to a cow that will produce \$20 worth of butter fat for that

feed, leaving a profit of \$10. And this is the November record sent in by one member of the club. Another a profit of \$4.40 on a feed bill of \$7.80. Another had a feed bill of \$5.13 and his cow produced \$8.20 worth of butter fat for that feed, which gave him a profit of \$3.07.

It is profitable to feed your cow well, even though you must buy the feed, so long as she makes use of all that feed by giving milk in return for it. And you can absolutely know whether or not your cow is making a profit for you over and above the cost of her feed, and whether or not she is making as much profit as she should. All this has been explained in these columns, but if you have missed it, or do not know just how to figure this out to your satisfaction, write us and we will be glad to help you.

How to Feed Your Dry Cow

A number of the Dairy Club members will have to feed their cows through a dry period before completing the year's record. You must not think that the dry cow can be fed a poor ration simply because she is not giving milk. It is true, she is not converting a lot of feed into milk during this period, but the unborn calf is making heavy demands and these must be met by the feed she eats. In addition her own body must be kept up and it is possible to store up a reserve during this period which will be returned in milk later. In the making of world records, the skillful feeder always feeds his cow so she will accumulate as heavy a reserve as possible that can be drawn upon when she begins her record. It is possible to make a considerable increase in the total production by the right kind of feeding during the dry period. A cow that has gone through a long milking period has drawn heavily on her body reserve of both fat and mineral matter, and must during the dry period be fed so she can make up for this loss. She cannot do this if she is kept on scant rations of feeds lacking in fat and minerals.

There should likewise be plenty of protein in the ration of the dry cow for in addition to keeping up her own body she has the body of her calf to build. As a rule, it is not necessary to feed much grain during this period if the roughage is of good quality, such as alfalfa, clover hay, and silage. Straw and corn fodder should not be the only feed. It takes protein to build body tissue and these feeds are deficient in protein.

It will not hurt in the least to have a good milk cow get fat during the resting period. Some dairymen seem to have a great fear of feeding their cows so they will get fat. The milk cow that gets fat while giving milk is not profitable because it shows she is not using the feed she consumes for milk, but the fat which a really good milk cow stores in her body during the resting period will be used to good advantage later. The cow that uses all her feed for milk will fall off in weight during the first few weeks after freshening. This is because she is using fat and mineral matter stored in her body, in the milk she gives.

Mineral matter is very necessary in milk production. Such feeds as alfalfa and bran contain liberal amounts of minerals, and if the cow is fed these feeds she will have an extra amount of mineral matter to use at the beginning of her milking period. It has been learned as a result of careful experiments that cows giving large amounts of milk cannot digest enough mineral matter from the feed given them day by day. It has been found that quite an increase can be made in a cow's production by so feeding her during the dry period that she can store a reserve of mineral matter to be used in milk-making after she freshens.

If your cow is naturally a good milker, the extra feed you give her during the few weeks before calving will not be lost. Do not try to economize too much in feeding your cow just because she is not giving milk. It may seem expensive to be giving her high-priced feed during the time she returns no product to sell, but remember that she is storing up such of the nutrients as are not needed to keep up her own body and later will turn them into cash for you.

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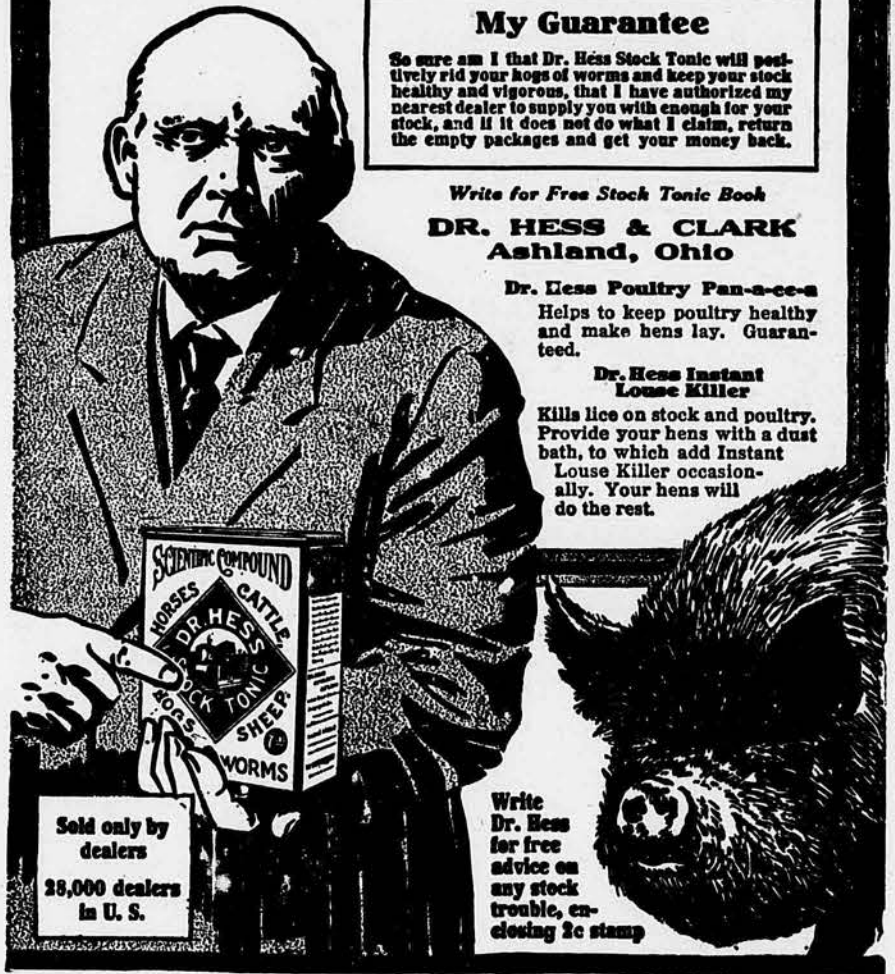
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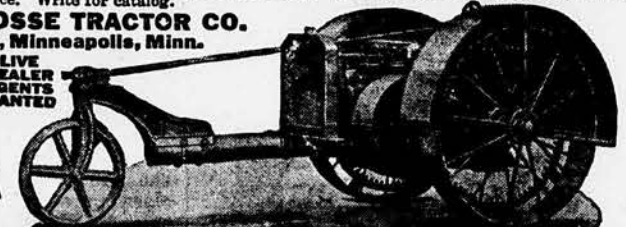


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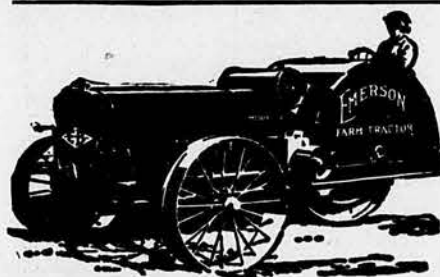
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FARM ITEMS

Need For Study of Insects

Too little attention is given to the life histories and habits of our injurious insects. One of the most useful and helpful men on the extension staff of an agricultural college is the entomologist. T. J. Talbert, formerly in the extension work in Kansas but now in similar work in Missouri, is probably known to many of our readers. In writing of his work he says:

"The chief object of the extension entomologist is to acquaint the gardener, the orchardist, and the farmer with the practical facts about the habits, life histories, injuries, and control of insects. When this has been done the producer is more capable of intelligently shaping his farm practice in a way that will be unfavorable to the development of injurious insects. He is also more interested in his work and if sprays, poison bait, or mechanical barriers are necessary to control the pests, he knows how to prepare and how to use them most effectively.

"Field meetings and demonstrations are of great value to the farmers because they are able to study the insects in their different stages upon their food plants. The farmers learn in the field in a few minutes more than any amount of reading or lecture courses could teach them. They are freer to talk and to ask questions when in the field. If their interest and attention are aroused in the field, the field, the literature on insects and their control appeals to them and they will make a study of it with the determination of putting into practice the remedies or control measures suggested.

"The apparent indifference and lack of knowledge on the part of farmers concerning insects is due perhaps to a number of causes. Prominent among these is the small size and insignificant appearance of many injurious insects. If the pests were as large as hogs, sheep, colts, or calves, no doubt their habits, life histories, and control would be well understood by every farmer. The damage and ravages of insects are often attributed to floods, storms, droughts, lack of soil fertility, and the like. It is also a fact that the general public knows less about insects than any other branch of agriculture. Many country school teachers are not even on speaking terms with the chinch bug, Hessian fly, or army worm. A few farmers will say, 'There is no use of trying to control the insects because we have always had them with us and we always will have them. We will just have to depend upon the weather and the Lord to control them—that's all.'

"This indifference and lack of interest in insects is not confined entirely to farmers. Many business men, professional men, and college teachers have no notion whatever of the value of a knowledge of insects. It is a sort of general notion among some that a discussion of insects is going to be dry and uninteresting and it is not worth while anyway. When the subject is handled properly, however, it is equally as interesting as any other phase of the extension work. In many cases farmers have been heard to say, 'Well, I am not much interested in bugs; I wish we had a man to talk live stock.' When once the farmers are shown the insects and their work in the fields, they are anxious to know more about their habits, life histories, and control. They see at once that their health, happiness, and prosperity may depend in no small way upon a knowledge of insects. Farmers are always immensely interested in a practical discussion on insect control."

Silage has cheapened the fattening ration for steers in Iowa. In a feeding test one lot where the daily ration per steer was 17 pounds shelled corn, 29 pounds silage, 2 pounds oil meal and 1½ pounds alfalfa, made gains at a cost of \$9.57 a hundred pounds, while another lot receiving 8½ pounds corn, 51 pounds silage, 2 pounds oil meal and 1½ pounds alfalfa, made gains at a cost of \$7.67 a hundred. In the first lot the steers averaged 2.94 pounds gain per day, while in the second lot they averaged 3.04 pounds. Reducing the corn and increasing the silage increased the gains and cut down the cost of making the gains.

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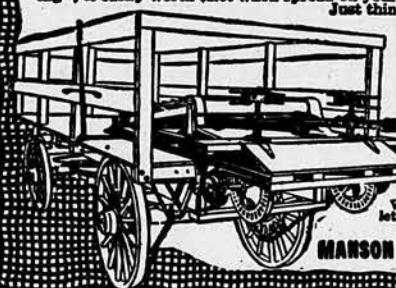
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We desire to make this department just as helpful as possible, and believing that an exchange of experiences will add to its value, we hereby extend an invitation to our readers to use it in passing on to others experiences or suggestions by which you have profited. Any questions submitted will receive our careful attention and if we are unable to make satisfactory answer, we will endeavor to direct inquirer to reliable source of help. Address Editor of Home Department, Kansas Farmer, Topeka, Kansas.

Use well the moment. What the hour brings for thy use is in thy power; And what thou best canst understand is just the thing lies nearest thy hand. —Goethe.

Saving Is a Good Habit

As soon as the child is old enough to want a few pennies of his own to spend, he is old enough to be taught the value of saving a part of these. When he is learning this lesson he should not get the impression that he is saving his money for the sake of having money laid away, but that he is saving it to use for a better purpose than for gratifying his hunger for candy.

It is hard for many people to realize there is a difference between saving money and being stingy, but there is a great difference. Not long ago we heard of a wealthy railroad president who took a picture to a shop to be framed. When the picture was unwrapped the rubber band which held the paper around it, was saved by this man and put into his pocket. Upon realizing that it might seem odd to the shop keeper, he explained that he had so thoroughly learned the lesson of saving in childhood that it had always been a part of him. And yet this man is not stingy with his money. He uses it for many good purposes, but unquestionably he has more to use than he would have had if he had not learned the lesson of saving.

It is an old saying that "it is not how much money a man makes, but how much he saves, that counts." Most of us can think of cases bearing out the truth of this statement. Some families seem to make their earnings reach over so many more advantages than do others. There is no secret to the way they do it, except that they have learned the habit of saving. They are not stingy, but frugal.

That Uninviting Parlor

Will you ever forget that room in the northwest corner of the house in which was stored all the best furniture, and which was opened only when there were visitors? If it was not in this particular corner, it always seemed so as there was a dampness and chill about it because of its being closed almost all the year. Even when it was opened and inhabited by company and the family, it didn't seem comfortable and we were glad at the end of the special occasion when it was set in order and again closed. For some reason, comfort in the rest of the house was spoiled, too, when this room was opened and we were expected to use the furniture.

What useless things parlors are anyway. There they stand, unused eleven and one-half months in the year, and when they are used if a vote were taken both the company and all members of the family would favor moving to the sitting-room.

We like the new term—living-room—better than the old, for when a living-room is mentioned we have come to think of the house as being free from the discomforts of a parlor, while the house that had a sitting-room nearly always had a parlor. The term living-room itself is full of meaning, and the room should be full of comfort. If comfortable, substantial chairs and couch, a good-sized reading table and a good light are there, it requires only a rug or small rugs and a few good pictures to complete its furnishings. Then all that is needed to make it a living-room is the presence of people who frequent it often enough to not feel strange in it or afraid to make the most use of it. Such a room as this, where all members of the family meet at the close of the day for visiting, reading, or play, will always be a pleasant memory instead of bringing a chilly feeling or a picture of stiff, seldom-used chairs.

Let us be more humanitarian and exchange the parlor furnishings for those which will bear up under daily use and will not be ruined by the presence of sunshine, air, and human beings.

What a comforting thought that every day is the beginning of a new year for us. Every day we have the opportunity of starting anew with a determination to make more of our lives.

Fresh air is as essential to health in winter as in summer.

Norwegian Prune Pudding

1/2 pound prunes
2 cupfuls cold water
1 cupful sugar
1 1/2 cupfuls boiling water
1/2 cupful corn starch
1-inch piece stick cinnamon

Pick over the prunes and wash them, soak one hour in cold water, and boil them until soft. Remove seeds, add sugar, cinnamon, boiling water, and simmer ten minutes. Dilute corn starch with enough cold water to pour easily, add to the prunes and cook for five minutes. Take out the cinnamon, mould the pudding and chill. Serve with the following sauce:

1/2 cupful thick cream
1/2 cupful milk
1/2 cupful powdered sugar
1/2 teaspoonful vanilla

Mix cream and milk, beat stiff with egg beater. Add sugar and vanilla.

FAMOUS DRY CURE FOR HAMS

PRESIDENT H. J. WATERS of the Kansas Agricultural College, recommends the following recipe for curing hams:

"For each 1,000 pounds of meat use the following: Forty pounds common salt, 10 pounds New Orleans sugar, 4 pounds black pepper, 1 1/2 pounds saltpetre, 1/2 pound cayenne pepper.

"Weigh the meat, and take such part of the ingredients as that is a part of the 1,000. Let the meat cool thoroughly. After thoroughly mixing the ingredients, one-half of the amount should be rubbed well into the meat. Put the meat in a dry, cool place—never in a cellar. Let it remain two weeks, then rub on the remainder of the cure, and let it lie about six weeks, when it is ready to hang.

"It is important that the meat be well rubbed each time the cure is applied, and that plenty of the cure be forced in the hock end and around the joints. Less cure should be used on the thin sides than on the joints. The heavier and fatter the meat, the longer the time required for curing. The warmer the weather, the quicker the meat will take the cure. These arrangements are estimated on the basis of about 200 or 225-pound hogs and ordinary January and February and March weather.

"While in general a light straw color would indicate sufficient smoking, it is always safe to try a piece of thin bacon or shoulder, to be certain that the process has been carried far enough to give proper flavor and cure. The hams may be kept one, two or three years without deterioration, and will improve in flavor up to the end of at least two years. No deterioration will take place for even five years if a ham is properly cured.

"Smoking should be done slowly. It should occupy four to six weeks, a little every day, and with little heat. Slow smoking gives a delicate flavor. After the smoking is finished, wrap each piece in paper, put in an unwashed flour sack and hang in a dry place."



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For the fifty-first to one hundred fiftieth best sets, \$5 each.....	500.00
For the one hundred fifty-first to three hundredth best sets, \$2 each.....	300.00
For the three hundred first to four hundredth best sets, \$1 each.....	100.00

Total, four hundred awards.....\$3,500.00
No awards will be divided. In case of ties, an identical award will be made to each tying participant.

WHAT THEY'RE FOR.

The award list above will be given to readers of Kansas Farmer and associate publications who submit the best suggestions for titles to fifty pictures constituting the Farm Implements Puzzle Game. Five of these pictures appear opposite and the balance of the series will appear in a future issue of this paper. As is explained below, the reprints of pictures 1 to 35 will be sent free to all readers. To get these reprints with complete information, simply send your name and address. Understand thoroughly that the pictures have no titles now.

When you and other readers have submitted your suggestions a committee of judges will go over them all and decide which in their judgment are best or most fitting or applicable—in other words, the titles which the pictures best portray.

As indicated by the legend under each picture, some farm part or tool or term is to be applied to the pictures. Titles contained in a list of about 3,000 items (the Official Key Book) will be used by the judges in making selections.

This Official Key Book is offered to participants in two ways: (a) Copy will be placed on public file in a public library of any town. (b) A copy will be given free when subscription is taken out as shown by the coupon below.

It is not a requirement of the game that you refer to the Key Book, but when you realize that no title not listed in it will be considered and that it follows the titles to the fifty pictures must be in it, you will see the importance of using it.

HOW TO SUBMIT SUGGESTIONS.

Sets of title suggestions may be submitted in either one of two ways: (a) In the Reprint and Reply Book. (b) Participants may also submit sets of suggestions written on forms supplied by the participants either with pencil, pen, or typewriter, preferably on sheets of uniform size. Each sheet must be numbered in order and have pasted thereon a picture clipped from this publication or drawn thereon a duplicate easily recognizable, beneath which picture or drawing is to be placed one title suggestion (one only) for the pictures, and the player's name and address.

If a player desires to submit more than one title suggestion for a picture, the additional title must be included in a second complete set prepared as above. In other words, when submitting single sets of title suggestions, each set must include no less and no more than fifty pictures (Nos. 1 to 50) with one title suggestion for each picture and with the participant's name and address written on the bottom of each sheet in every such set. When submitting single sets of title suggestions the pages must be arranged in numerical order, securely fastened together, wrapped flat, and sent prepaid by express or postpaid with stamps affixed at 2 cents per ounce, to Farm Implements Puzzle Game Editor, Farm and Fireside, Springfield, Ohio.

GET PICTURES 1 TO 35 FREE!

We will send reprints of pictures 1 to 35 to anyone requesting them. Thus, with pictures 36 to 40 clipped or copied from this page and reprints of the preceding pictures, you will have all pictures which have appeared to date, and as you have until midnight of February 20 in which to submit sets of suggestions, you will see that you have ample time in which to make an earnest effort to win the thousand dollars or one of the other four hundred awards.

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No. 36.—What Farm Implement, Machine Part or Mechanical Term Does This Picture Represent?



No. 37.—What Farm Implement, Machine Part or Mechanical Term Does This Picture Represent?



No. 38.—What Farm Implement, Machine Part or Mechanical Term Does This Picture Represent?



No. 39.—What Farm Implement, Machine Part or Mechanical Term Does This Picture Represent?



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Road Maintenance Argument

It is the people of today who are paying for all maintenance and new construction, and the people who pay the bills today are entitled to have roads in good condition for their own use now. The man who is footing the bills today hopes, of course, that future generations, especially his own children, may have better roads than he has. He is willing to have just as much of the taxes he pays go into good permanent grading and bridge building as possible, but he does want enough of the money he provides spent on maintaining the roads he has to use every day to keep them in reasonable condition for his own use now. Some of the best county engineers and boards of supervisors in Iowa are great on permanent construction work but woefully weak on maintenance features. They are making great progress in permanent grading and bridging, but there is constant justified complaint about the condition of their roads from lack of dragging, neglect of bad mudholes, rough fills over bridge approaches and culverts, road grades built to a peak in the center, and all the other ills to which roads are subject when persistently neglected. Absolutely the first duty of both engineer and board is to keep the roads in reasonably good condition for the people who pay the taxes and who want to use them today. The second duty is to make all possible progress with permanent construction work. There is no justification for neglecting the maintenance of the roads today in order that the extra money saved may go into more permanent construction for better roads tomorrow.—Iowa Highway Commission.

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How many of us realize that the United States has the greatest system of agricultural education in the world?

How many of us are aware that the United States Department of Agriculture has no equal?

We Americans, because we accomplish much, demand much, and we are right in doing so. But let us never lose sight of the fact that ability of the agricultural colleges and the Department of Agriculture to do good depends almost entirely upon the desire and willingness of ourselves to take advantage of and apply knowledge that is ours for the asking.

Make it a point to know your college. Visit your college periodically; attend Farmers' week and Farmers' Institute meetings. Cultivate the acquaintance of the professors. Discuss your plans and problems with them. These men have a wide acquaintance among farmers and a wide knowledge of conditions. They may know how these men solved the problems. Furthermore, they have access to a vast fund of scientific knowledge which you can put into practical use. You are not getting value received for your taxes each year if you don't know your college.

If you expect to build, repair or rearrange your hog houses in advance of the spring litters, you will find it helpful to have a copy of Farmers' Bulletin No. 438. This may be had of the Editor and Chief of Publications, United States Department of Agriculture, Washington, D. C.

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FATTENING CHICKENS

PEOPLE on the farms seldom make any attempt to fatten poultry for market. A chicken properly fattened is much superior to one that has had only ordinary free range feeding. Crate fattening, as conducted by the large poultry-buying houses, may not be practicable on the farms where poultry is largely a by-product, but there are those who attempt to build up a private trade in dressed poultry and these people should by all means learn to finish their stock for market.

It is just as important to fatten chickens for this kind of trade as it is to fatten hogs or beef cattle. In fact, when the chicken comes from the range it is in the proper condition to put on economical gains. Students in the poultry department of the University of Missouri found in recent tests that chickens will gain about 23 per cent in twelve to fourteen days' feeding. That this gain is economical was shown by the fact that the grain required to put on

a pound of gain was approximately 3½ pounds.

The total cost of a pound of gain with corn meal at \$2.25, bran at \$1.50, middlings at \$1.75, and sour milk at 20 cents a hundred pounds, was eight cents. Even at the present high price of feeds, economical gains can be made.

The ration consisted of corn meal 7 pounds, shorts 3 pounds, and bran 1 pound. To every pound of this mixture, two pounds of sour milk was added. This wet mash was fed twice daily. The length of the feeding period, which was ten minutes the first day, was increased a minute a day as the period advanced. The chickens were confined in coops 2 x 2½ feet square, each coop having a wire bottom. Slaters were placed up and down, 1½ inches apart, permitting them to reach the food which was placed in a trough outside. The close confinement not only discourages exercise, thus promoting gain, but the inactivity causes the tendons to soften. The fat is distributed through the muscles by the fat-

tening process and the result is a luscious flesh which comes only in a finished product, put on cheaply.

Bran is one of the very best foods that can be given to chickens. It can be placed before them all the time and they will not eat too much of it. One of the main advantages of feeding bran is that it contains more mineral matter than ordinary ground grain, and supplies that which may not be abundant in the ration. It is customary to add one pint of linseed meal to two quarts of bran, mixing this with four quarts of ground grain. When made into a mash, bran need not be fed over once a day, and it is excellent when given with clover hay or cooked potatoes.

Kansas Hens Money-Makers

That the Kansas hen has been a lifesaver to the farmers who have experienced crop failures and other reverses, is indicated by letters received by the poultry husbandry department in the Kansas Agricultural College.

The farmer's wife usually has the poultry under her supervision and she has contributed a big share to the family finances. One woman in Western Kansas reports a net profit of \$200 on her poultry in the last eleven months.

"A well-bred healthy hen, properly nourished, will lay 120 eggs a year, while the average fowl will produce from sixty to eighty eggs," said Ross M. Sherwood,

acting head of the department. "Some farmers figure that the hen earns her board in destroying weed seeds and injurious insects.

"The reason why some hens are not more productive is because they are not properly nourished. It is just as important to feed a balanced ration to the hens as to the hogs and cows. Particularly is this important in winter. The food problem does not require so much attention in the summer, for the hens forage on the farm and get a variety of diet. In any season the fowls should go to roost with full crops."

Make changes in handling poultry as gradual as possible. Crude changes of any kind both in housing and feeding, as far as possible, should be avoided. In putting fowls into winter quarters, do not confine birds too closely and leave the windows open. Sudden changes from range to night houses frequently throw fowls into moulting in early winter. If the pullets have been raised and fed on the same feed they are to receive at laying time, the results will be more satisfactory. Feed all the whole sound grain the fowls will eat, and provide beef scrap and wheat bran in boxes. Throw a forkful of hay into the pens every day.

If all poultry houses were lathed and plastered with two coats of mortar, the lice problem would be solved and the cold drafts of winter shut off. To destroy lice in such a building it would only be necessary, once each month, to burn enough sulphur to fill the house with dense fumes, keeping it shut for an hour and the work would be done. When the house is not plastered, it is not airtight and too much fresh air comes in while the sulphur is burning. White-washing will also be easier on a plastered wall, and the poultry house will be warm in winter and the hens more comfortable and profitable.

Hens in Snow Time

When the snow is knee deep and everything sealed with ice, hens will require the best of care. A hen is as helpless in the snow as if she had no legs at all. She must have some place, however, where food, water and the dust bath are accessible, for she will not lay if compelled to crouch on the floor beneath the roosts. With snow on the ground the world is a wilderness to hens; they have no inducements to lay, and will quickly defer egg production until spring weather arrives. The flock will appreciate a warm, commodious scratching shed when the ground is covered with snow, better than at any other time. They can go out and do a little foraging in rainy weather, but when deep snows come they must be kept indoors, and a scratching shed is essential to keep them healthy and in laying condition. If you have no shed for your hens to scratch in, then a few square yards in front of the chicken house should be cleared away of snow, where the hens can go out for a little while during the sunny days. The food at such times should be given warm at least once a day, and fed on clean boards or in troughs, so that it may not be contaminated with the filth that is on the floor of the poultry house. A warm place should be provided for them to roost in and the house rendered as comfortable as possible. The main factor in egg production in winter is warmth and dryness. It may involve some labor to remove enough snow to afford the hens a little room outside of their cramped quarters in the hen house, but it must be done or there will be no eggs.

The hen should be compelled to exercise in the winter. One way to furnish some exercise is to feed such grain as corn, oats, wheat and barley in litter. Cover the floor with straw six inches deep and scatter the grain feed in it. The straw should be changed frequently as it must be remembered that it will soon become soiled from the droppings from the birds. Some of the poultry diseases are spread through the droppings.

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FARM AND HERD.

The Big Four Stock Farm, Hickman Mills, Mo., reports their O. I. C. herd doing well. This is one of Missouri's good herds of that breed of hogs and a feature of the herd at this time is the choice lot of young stock. They also have a fine herd of Jersey cattle.

W. W. Shott of Lathrop, one of Missouri's pioneer breeders of high class jacks and jennets, reports his herd doing well. Owl Hollow Stock Farm, owned by Mr. Shott, has produced a number of great jacks, and his herd from time to time has been headed by famous jacks, among them Lucky Dutchman, one of the greatest sires of his day and the sire of a number of famous jacks.

W. A. Wood & Son, the well known breeders of registered Hereford cattle and Duroc hogs, report their herds doing well. This year they sold a number of very fine boars to go to good herds. A feature of their herd at this time is the large number of choice gilts bred and open and the very fine lot of September pigs.

George C. Tredick, of Kingman, Kansas, manager of the famous Tredick Farm Holstein herd, reports that the herd made another fine record in 1916. This is one of the herds that was started with heavy producing foundation stock and that has been built from foundation up for production, and few herds in the Southwest have a better record.

The management of Edgewater Stock Farm, Fort Atkinson, Wisconsin, report their herds of Holsteins and Guernseys doing well. This is one of the leading dairy cattle farms in Wisconsin. They have large herds of both Holsteins and Guernseys and foundation stock for dairy herds are shipped from this farm to many states.

H. B. Walter & Son have settled on February 6 for a bred sow sale to be held at the farm near Effingham, Kansas. A special train will be run from Atchison for the benefit of parties wishing to attend the sale. This train will return in the evening in time for all connections. There will be sold forty head of immunized tried sows and fall gilts, practically all of which will be either sired by or bred to Big Bob Wonder; five selected sows all bred to him, and thirty fall gilts pronounced by all who have seen them to be the best bunch ever sired by one boar sired by him. The Big Bob Wonder gilts

80 - HEAD OF HOLSTEIN-FRIESIAN - 80 CATTLE

TO BE HELD AT BIG SALE PAVILION AT

Waterloo, Iowa, Wednesday, January 17, 1917

Complete Dispersion of the High Grade Herds of Clover Valley Holstein Farm, Whitewater, Wisconsin, and Maxwell Farm, Waterloo, Iowa.

Thirty large choice cows, all of which are close springers or lately fresh.

Twenty-five fine large springing two-year-olds.

Ten choice bred heifers coming two.

Fifteen extra good yearlings not bred.

All cattle tuberculin tested by state approved veterinarians. This is your opportunity to secure some of the best Holsteins ever sold in a public sale ring.

Sale begins at 12:30. For detailed information write

CLOVER VALLEY HOLSTEIN FARM, Whitewater, Wis.
MAXWELL FARM, Waterloo, Iowa.

AUCTIONEERS—R. E. HAEGER, WILLIAM HOLLAND.

NOTE—The Maxwell Farm consignment is composed largely of daughters of Sir Ormsby Skylark, sire of world's champion cow.

GUERNSEY CATTLE.

GUERNSEY CATTLE.

A Guernsey Grade Cow

in Springfield, N. Y.,
PRODUCED in one

year 13,388 lbs. of milk and 755 lbs. of butter fat, EQUIVALENT TO 878 lbs. of BUTTER.

"USE A GUERNSEY BULL on your grade herd and you can produce such cows"

Write us for booklets and names of breeders

THE AMERICAN GUERNSEY CATTLE CLUB
BOX R-K PETERBORO, N. H.

HEREFORD CATTLE.

HEREFORD CATTLE.

WALNUT BREEDING FARM

Hereford Cattle, Shropshire and Cotswold Sheep, Berkshire Hogs. Thirty-five grandsons and granddaughters of Beau Brummel 10th for sale. Some extra herd headers at reasonable prices, breeding considered. Come and see my herd. Satisfaction guaranteed.

LEON A. WAITE,

WINFIELD, KANSAS

HEREFORD CATTLE FOR SALE

35 BULLS, 10 MONTHS TO 2 YEARS OLD.
20 COWS AND HEIFERS.

Best breeding families. Bred to an Imported Bridgish bull. Come and see me. Sale barns right in town.

T. I. WOODDALL,

HOWARD, KANSAS

STAR BREEDING FARM---HEREFORD PLACE FOR SALE--100 BULLS

50 EARLY BULL CALVES
30 COMING 2-YEAR-OLDS
20 COMING 3-YEAR-OLDS

Herd headers and range bulls. Ten yearling heifers, twenty heifer calves and a carload of good cows. The very best breeding represented. Come and see me.

SAMUEL DRYBREAD,

ELK CITY, KANSAS

HEREFORDS AND PERCHERONS

Choice 2-year-old bull, weight 1,600 lbs.; extra good bull calves. One May calf, weight 600 lbs., outstanding herd header prospect. Two choice yearling Percheron stallions. Priced to sell.

M. E. GIDEON - EMMETT, KANSAS

HEREFORD CATTLE

150 Head in Herd. A few cows and heifers for sale. Also a lot of farm and range bulls. Priced reasonable.

B. M. BROWN, FALL RIVER, KANSAS

will be bred to Wonder King, the noted son of Long King's Equal that was selected to cross on these gilts, and Eclipse Model, an outstanding son of Wonder Master by Wonderful out of a Grand Master dam.

L. W. Case, of Waterloo, Iowa, announces a dispersion sale of high grade Holsteins to be held at Waterloo, Iowa, January 17. This sale will include the entire high grade herds of Clover Valley-Holstein Farm, Whitewater, Wis., and the Maxwell Farm, Waterloo, Iowa. The offering will include thirty large choice cows, springers or lately fresh; twenty-five choice springing 2-year-olds; ten choice bred heifers coming 2 years old, and fifteen head of extra good yearlings not bred. All of the cattle in the sale will be tuberculin tested by state approved veterinarians.

Fred Chandler, of Charlton, Iowa, the well known breeder and importer of Percheron and Belgian horses, reports that his herd is doing well and that there is a good demand for high class draft stallions and mares. Mr. Chandler has a very fine lot of young stallions at this time. They are the produce of the sixty-two imported mares on the Chandler farm.

Lilac Dairy Farm, owned by Smith & Hughes, of Topeka, is the home of one of the outstanding herds of pure-bred Holstein cattle in the Southwest. This herd has been built up along lines that insure producers and the record of the herd is ample evidence of the success of this firm. A feature of the herd at this time is the great lot of A. R. O. dams and the choice young stock, including a number of young bulls backed by records.

RED POLLED CATTLE.



RED POLLED CATTLE

FOR SALE—Twelve cows and heifers.

I. W. FOULTON, Medora, Kan.

Red Polled Cattle

A few 1916 bull calves for sale. Also a few cows and heifers.

AULD BROS. - FRANKFORT, KANSAS

RED POLLED BULLS

FORTY yearling bulls, big rugged fellows, sired by ton sires; all registered and priced reasonably. Will sell a few females.

E. E. FRIZELL, Frizell, Pawnee Co., Kansas

ANGUS CATTLE

McAdams Angus Herd

Outstanding herd bulls and richly bred cows with calves at foot for sale. Cows with calves by the great young bull, Senator Blackcap, and rebred to Blackcap H, grandson of Blackcap Judy. Also the show breeding bull Ecuador Ito by Undulata Blackcap Ito. Will also sell some choice Berkshire gilts.

GEO. M. McADAM - HOLTON, KANSAS

EDGEWOOD FARM ABERDEEN-ANGUS CATTLE

Twenty-five young bulls, also some good cows and heifers for sale. All registered.

D. J. WHITE, CLEMENTS, KANSAS
Main line of A. T. & S. F. Ry., 145 Miles West of Kansas City.

When writing advertisers, please mention Kansas Farmer.

HORSES AND MULES.

HORSES AND MULES.

HOLSTEIN CATTLE.

HOLSTEIN CATTLE.



Percherons and Belgians

SIXTY-FOUR HEAD REGISTERED STALLIONS AND MARES.
THIRTY STALLIONS AND THIRTY-FOUR MARES AND COLTS.

To close up a partnership, the thirty-four mares and colts must be sold by March 1, 1917. I mean business. Come and see me.

J. M. NOLAN, Paola, Kansas

FOR SALE THREE STANDARD-BRED COLTS: One brown filley 4 years old, 16 hands high, weighs 1,200 pounds, sire Pactolus Ellwood 50245 by Pactolus 2:09, No. 9102; has been tracked a little and shows lots of speed. One black stud, 3 years old, stands 15.3, weighs 1,135 pounds, broken single and double, has been tracked some with success; is a full brother to the above filley. One black filley, name Luta Miller, 3 years old, broken, to drive and quite clever, same sire and dam is Estan Selotta by Black-leer No. 46643 by Symboler 2:09 No. 19869. Six head of Hereford males, 2 years old; 60 head of well-bred stock cows, 3 to 4 years old; 15 Poll Angus; 45 head Shorthorn grades bred to the Hereford males; six head of high-grade Holstein heifers, two milking, two springing, bred to my Holstein male; one Holstein male, 2 years old next April, weight 1,200 pounds; four head of registered female Jerseys. **O. L. THISLER, CHAPMAN, KAN.**

PIONEER STUD FARM

Established 1870

FIFTY REGISTERED STALLIONS AND MARES

JUST ARRIVED—A new shipment of stallions and mares. If you are in the market for a good Percheron stallion or mare, now is the time. We can show you more bone, size, action and conformation than you will find elsewhere. Write or come today.

C. W. LAMER & SON

SALINA, KANSAS

PRAIRIE VIEW STOCK FARM

Has 6 big, black Mammoth jacks and jennets. Every jack my own raising; two to six years old, 15 to 16 hands high, extra heavy bone, big bodies. I can sell you a better jack for \$500 to \$800 than most speculators can for a thousand. Come and see for yourself. They must sell.

ED BOEN, LAWSON, MO.
38 Mi. E. of M. C. on C. & M. St. P.
40 Mi. S. W. of St. Joe, on Santa Fe

40 Head Percheron Stallions - 40 Jacks and Jennets - 40

Two to six years old. Heavy bone. Imported Spanish jack at head of jennet herd. Prices reasonable. Come and see us. We mean business.

J. P. & M. H. MALONE

CHASE - KANSAS

SIX BREEDS DRAFT STALLIONS
Pedigree and guarantee with each, \$450 and up. Time given.

R. L. LITTLE, Good Block, Des Moines, Ia.

Barn Full of Percheron Stallions and Mares. Twenty-five mature and aged jacks. Priced to sell. **AL. E. SMITH, Lawrence, Kansas.**

DISPERSION SALE OF CLYDESDALES.

One span of brood mares, regular breeders, in foal by imported stallion. One coming 3-year-old filley, one coming 2-year-old stud colt and one weanling. All show stuff. The thick, blocky kind, sound and best of breeding.

C. H. WEMPE - SENECA, KANSAS

POLAND CHINAS

Poland China Boars and Glts

Twenty-five early spring boars and twenty-five glts. Sired by I Am King of Wonder and Watt's King.

WM. WATT & SON - GREEN CITY, MO.

OWA KING BRED SOW SALE FEB. 1

Will Sell 40 Head of Tops. Am offering now some choice herd boar prospects, June and July pigs. All immune. Send for catalog of sow sale and price on boars.

P. M. ANDERSON, LATHROP, MISSOURI

TOWNVIEW FARM

Big-Type Poland Chinas.

For Sale—25 summer and fall glts, sired by Miller's Sioux Chief and out of Lady Longfellow. Bred for late spring litters. Also 25 summer boars. Come and see my herd.

C. E. GREENE - PEABODY, KANSAS

DEMING RANCH POLANDS

Twenty strictly high class boars, bred the same as our grand champion sow and other prize winners. They are herd headers. Also glts and bred sows and 150 fall pigs. All immune.

THE DEMING RANCH

H. O. Shelden, Herdsman Oswego, Kansas

EUREKA POLANDS AND DUROCS

April boars, fancy individuals. Priced for quick sale. Sires, Lafollette's Last, Bader's Golden Model 2d, McWonder and Big Ex Wonder.

W. H. SALES - SIMPSON, KANSAS

ARKELL'S BIG POLANDS

April and March bred glts by Longfellow Again and Chief Big Bone, weight 225 to 275 pounds. They are bred to Arkell's Big Timm. Also a few bred sows. Priced right.

JAS. ARKELL, JUNCTION CITY, KANSAS

OLD ORIGINAL SPOTTED POLANDS

Stock of all ages, sired by seven of the very best boars of the East and West. Priced right. Write your wants to the

CEDAR ROW STOCK FARM

A. S. Alexander, Prop. Burlington, Kansas

Home-Bred Draft Stallions, your choice \$500 with the exception of two. Also mares for sale. **A. Latimer Wilson, Creston, Iowa**

PERCHERONS-BELGIANS
Imported and home-grown mature stallions, ton and heavier, 3-year-olds, 2-year-olds, yearlings. Produce of 62 imported mares and noted prize winning imported sires. Farmers' prices. **Fred Chandler, R. 7, Chilton, Ia. (Above Kansas City.)**

PERCHERONS FOR SALE

Five head pure-bred Percherons—Two mares, one 2-year-old stallion, two last spring colts. All good ones. Low price to the man that takes all.

J. W. BARNHART, BUTLER, MISSOURI

JACKS AND JENNETS

15 Large Mammoth Black Jacks for sale, ages from 2 to 6 years; large, heavy-boned. Special prices for fall and winter sales. Fifteen good jennets for sale. Come and see me.

PHIL WALKER, Moline, Elk County, Kansas

LOOK HERE!

\$15,000 Worth of Property. Twenty-five head of stock horses and mules; 11 head of mammoth jacks; also some extra good jennets; good new 7-room house, acre of ground with good stock barn in Lathrop, Mo. Also one Percheron stallion, weight 2,000. Will sell this stuff cheap for cash or trade it for a good stock farm of 200 acres, within 100 miles of Kansas City.

W. W. SHOTT

Owl Hollow Stock Farm, Lathrop, Missouri

GALLOWAY CATTLE.

GALLOWAY BULLS

SIXTY yearling and two-year-old bulls, strong and rugged; farmer bulls, have been range-grown. Will price a few cows and heifers.

E. E. FRIZELL, Frizell, Pawnee Co., Kansas

CHESTER WHITE HOGS

CEDARDALE CHESTER WHITES
Extra good April boars sired by Wonder Chief and W. P. Sweepstakes. Also herd boar, W. P. Sweepstakes, sired by Wildwood Prince, senior champion and grand champion Iowa, 1914. Cholera immune. Priced to sell. **J. S. KENNEDY, Blockton, Iowa.**

Registered Immune O. I. C. Chester White Bred Glts. Service boars, \$18 up; tried sow, prize winner, \$35; weaned pigs, \$8; unrelated pairs \$15, while they last.

BIG FOUR STOCK FARM

Route 1 - Hickman Mills, Missouri

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ATTEBERRY'S HAMPSHIRE HOGS
Bred sows, \$25 to \$30 each. July glts and boars, \$10 each for 30 days. Choice individuals. **ATTEBERRY & SONS, Lancaster, Mo.**

POLAND CHINAS.

LANGFORD'S SPOTTED POLANDS
Boars—Serviceable age, guaranteed to please. Breeding stock, both sexes.

T. T. LANGFORD & SONS, Jamesport, Mo.

Size and Quality Poland

Poland China boars and bred glts for sale. I have six glts bred to farrow in March that weigh 275 pounds each. Price, \$35 each. Four boars of same weight, \$25 each. Lot of summer and fall pigs, \$15 and \$10 each, the big kind.

OTTO PLAGAMANN, EUREKA, MISSOURI

Clyde Girod, At the Farm.

F. W. Robison, Cashier Towanda State Bank

HOLSTEIN FRIESIAN FARM, Towanda, Kansas

Pure-Bred Holsteins, all ages, strong in the blood of the leading sires of today, headed by Oak De Kol Bessie Ormsby 156789. Special offering of choice young pure-bred bulls, ready for service, from tested dams. Let us furnish you a bull and improve your herd. TWENTY-FIVE pure-bred females, young useful Holsteins with A. R. O. records from 12 to 26 pounds butter in seven days.

BEFORE YOU BUY, TALK WITH US

We have an especially large, choice selection of extra high grade young cows and heifers due to freshen this fall and early winter, all in calf to pure-bred bulls. These females are large, deep bodied, heavy producers, with large udders, all well marked individuals and the right dairy type. Our offerings are at prices that challenge comparison for Holsteins of their breeding and quality. High grade heifer calves, \$25. Send draft for number wanted. Let us know what you want in Holsteins, and we will be pleased to send you descriptions and prices. Keep us in mind before purchasing. Wire, write or phone us.

GIROD & ROBISON -:- TOWANDA, KANSAS

HOLSTEINS and GUERNSEYS

Registered and high grade cows and heifers—service bulls. Carload or less. High grade calves, \$18.00 each crated. Write us. We have what you want. Address **EDGEWATER STOCK FARM - FORT ATKINSON, WISCONSIN**



Purebred Registered

HOLSTEIN CATTLE

During the fiscal year ending April 30, 1916, there were reported to the Advanced Registry office of the Holstein-Friesian Association, 11,868 short time official records, over one half of which were by heifers with first or second calves. The average seven-day production of these 11,868 animals was 40.1 lbs. of milk, containing 3.53 per cent of butter fat. These figures emphasize the fact that Holstein merit is based, not on individual records, but upon the wonderful uniformity of high productivity of the pure-bred Holstein cow. There is big money in the big "Black and White" Holsteins.

Send for FREE Illustrated Descriptive Booklets. The Holstein-Friesian Association of America
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TREDICO FARM HOLSTEINS

Breed 'em from "Tredico Truth Herbert Oak" ancestry; largest type. Champion of "National Dairy Show." Good udders and no extreme angles of hard forcing records.

George C. Tredick, Route 2, Kingman, Kan.

SHORTHORN CATTLE.

Barber Shorthorns

Villager Junior and Curley Dale Head Herd.

For Sale—Twenty coming yearling bulls, 20 yearling bulls, 40 cows and heifers, Scotch and Scotch topped. We have what you want. Come and see our cattle. Three hundred head in herd.

F. C. Barber & Sons

SKIDMORE - MISSOURI

PEARL SHORTHORN HERD

Pearl, Dickinson County, Kans.

For Sale—Twenty bulls, 8 to 10 months old, red, white and roan. Can ship over Rock Island, Union Pacific, Missouri Pacific or Santa Fe. Come and see my herd.

C. W. TAYLOR - ABILENE, KANSAS

OUR HERD BULL

Abbotsford Lad 2d 395841, pure Scotch, deep red and a good breeder, three years old, priced to sell quick. We are keeping every heifer calf sired by him, also some young bulls six to ten months.

CHESTER A. CHAPMAN, Ellsworth, Kan.

CEDAR HEIGHTS SHORTHORNS

For Sale—Ten herd bulls from seven to eighteen months old. Scotch and Scotch-topped. Priced reasonable. Come and see my herd. **HARRY T. FORBES, Bell Phone 59-N-1, Route 8, Topeka, Kansas.**

Sycamore Springs Shorthorns

Master of Dale by the great Avondale heads herd. A few young Scotch bulls and bred heifers for sale.

H. M. HILL - LAFONTAINE, KANSAS

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Headed by Prince Valentine 4th 342179. Families represented, Orange Blossoms, Butterflies, Queen of Beauty and Violets.

H. H. HOLMES, Route 1, Great Bend, Kan.

PURE-BRED DAIRY SHORTHORNS

Double Marys (Pure Bates), Rose of Sharon and Craggs. Offer 3-year-old herd bull. A snap. **R. M. ANDERSON, BELOIT, KAN.**

LOWMONT SHORTHORNS.

Brawith Heir 351808 heads herd. Inspection invited. **E. E. Heacock & Son, Hartford, Kan.**

If on the market for pure-bred stock, read KANSAS FARMER live find what you want.

REGISTERED HOLSTEINS

We want to cut down our herd. Will sell ten or twelve choice cows, most of them young, also a few heifers.

M. E. MOORE & CO. - CAMERON, MO.

HOLSTEIN COWS

Holstein cows, springers or bred heifers. Very large, good markings, out of best milking strains, bred to pure-bred bulls of the very best blood. Special prices on carload lots. **J. C. ROBISON, TOWANDA, KANSAS**

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Offers for sale four bull calves two to four months, sired by Jewel Paul Butter Boy 94245. These calves are all nicely marked and from good milkers.

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Butter Bred Holsteins

Buy your next bull calf from a herd that won the butter test over all breeds.

J. P. MAST - SCRANTON, KANSAS

The Cedar Lane Holstein Herd

We are now offering some exceptionally good bulls of serviceable ages at very attractive prices. These calves are sired by our 29.4-pound grandson of Pontiac Korndyke.

T. M. EWING, INDEPENDENCE, KANSAS

HOLSTEIN CALVES

Registered and high grade Holsteins. High grade heifer calves two to four weeks old, \$20, delivered. We can supply you with anything in Holsteins.

CLOVER VALLEY HOLSTEIN FARM

Whitewater - Wisconsin

BONNIE BRAE HOLSTEINS

Registered bulls from calves to 5 months old. Best breeding and good individuals.

IRA ROMIG - TOPEKA, KANSAS

Braeburn Holsteins

A. R. O. BULL CALVES

H. B. Cowles, 608 Kansas Av., Topeka, Kan.

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Route No. 2, Topeka, Kansas.

BREEDERS OF PURE-BRED HOLSTEINS
Bulls from A. R. O. cows, all ages, for sale.

GOLDEN BELT HOLSTEIN HERD

Herd headed by Sir Korndyke Bess Hello No. 165946, the long distance sire. His dam, grand dam and dam's two sisters average better than 1,200 pounds butter in one year. Young bulls of serviceable age for sale.

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Out of A. R. O. dams. Three, six and eight months old. Priced reasonable.

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HIGH-GRADE HOLSTEIN CALVES

Beautifully marked, 15-16ths pure, \$20 each. Write us. **Fernwood Farm, Wauwatosa, Wis.**

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Holstein-Friesian A. R. O. bulls ready for service. World's record blood flows in their veins.

G. REGIER & SONS, WHITEWATER, KAN.

HOLSTEIN CALVES—Ten heifers and two bulls,

15-16ths pure, beautifully marked, 5 weeks old, from heavy milkers. \$20 each, crated for shipment anywhere. Write **EDGEWOOD FARM, Whitewater, Wis.**

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ANGUS CATTLE.

Geo. A. Deltrich, Carbondale, Kan.

D. J. White, Clements, Kan.

RED POLLED CATTLE.

Manlon Groenmiller, Pomona, Kansas.

HOLSTEINS.

C. E. Bean, Garnett, Kansas.

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THE WORLD'S GREATEST PORK HOG.

ANNUAL BROOD SOW SALE, WEDNESDAY, FEBRUARY 14, 1917

Sixty big spotted tried sows and yearlings bred for February, March and April farrow. You know the kind. Catalog tells all. Ask for it. Address

H. L. FAULKNER, BOX K, JAMESPORT, MISSOURI

"THE GREAT PRICE WRECKERS"

NOW Is The Time To Build Or Improve!

SHARPLES
TUBULAR "A"
CREAM SEPARATOR

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**PRICE
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They chose us for this great public service because of our time-tried reputation through 24 years honest public dealing. They knew we were best equipped to quickly market these separators on exactly the same guarantee well and favorably known to over a million satisfied users.

On This First And Only Tremendous Cut in Price Offer Thousands of Farmers And Dairy-men Will Quickly Take This Entire Lot of Genuine Sharples Tubular "A" Cream Separators.

Our Exclusive Offer:

The tremendous cut in prices on all sizes enables you to buy your Sharples on 30-day FREE trial, paying cash when you are satisfied—or on easy time payments if you wish.

This Is What You Save

Size	Cap. Lbs.	per Hour	Regular Price	Our Price
No. 2	300		\$55.00	\$32.75
No. 3	400		65.00	40.00
No. 4	500		75.00	45.00
No. 6	700		90.00	52.50
No. 9	950		110.00	70.00

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The Double Guarantee

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Both the Sharples guarantee which has protected a million Sharples users everywhere for thirty-five years and Harris Brothers well-known satisfaction or money-back guarantee which has protected farmers and dairymen for twenty-six years in purchases of many million dollars go with your Sharples.

For Quick Sale and Immediate Delivery—No Matter Where You Live. Act At Once. Don't Risk the Disappointment of Failing to Get Your Sharples Now. Tear Out, Fill In and Mail the Coupon Below or Write a Postal or a Letter For All Facts Today.

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You Can Buy a Carload of Lumber or Building Material from Us for Immediate Shipment Without Paying a Cent in Advance.

**CHICAGO HOUSE
WRECKING CO.**

This Great Spring of 1917 Sale, is the Greatest in Our History. Our Binding Guarantee Absolutely Protects You.

24 Years of Honest Public Dealing

THIS enormous business, with a capital of \$10,000,000.00 and satisfied customers in practically every township in the United States, was founded in 1892 on a new idea—to buy and sell nothing but bargains! From that day to this—24 years of honest public dealing—we have never swerved a hair's breadth from our original plan and purpose. Each year has marked our steady growth in power to serve our growing host of regular customers. Each year our growing financial strength—our increasing cash buying power—has brought us added ability to control the sources of those tremendous bargains that have made our name famous from ocean to ocean.

TODAY we are recognized as the leading "spot cash" buyers of brand new desirable merchandise at forced sales. Big manufacturers and merchants, seeking a quick outlet for surplus stocks, naturally turn to us for the ready cash. Their loss means your gain! We have our pick and choice at Sheriff's and Receiver's Sales, Big Auction Events and Exposition Sales. And we sell as we buy—nothing but quality goods at unmatchable bargain prices. Direct dealing with us means more than just a big money-saving—it means guaranteed satisfaction as to quality, prompt shipments and the fair, "square deal" treatment that has been the corner-stone of our business for the past quarter century.

LUMBER AND MILLWORK BARGAINS!

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HARRIS HOME DC-118
\$858 Size 24x38 feet; seven rooms, bath and store room. An ideal cottage or country home. Built many times at a tremendous saving. Material sensibly cut-to-fit—no waste. Price includes all lumber, millwork, glazed sash and doors, shingles, sheet metal, nails, rough and finishing hardware—ready for plaster. Only one more than Modern American Harris Home.

**MAIL COUPON FOR
Our New FREE
\$10,000
Book of Plans!**

Wire Nails

100 lbs., \$225
Standard Wire Nails in 100 lb. kegs. Sizes from 3d to 50d mixed. Order No. **DC-225** Price **\$225**

For 3d Wire Nails, Order No. **DC-40**. For 100 lbs. pounds **\$3.00**
For 10d Wire Nails, Order No. **DC-50**. For 100 lbs. pounds **\$2.95**

Best Mixed Paint

\$1.27 Per Gallon
Harris high grade ready mixed house paint. Sold under a binding guarantee of satisfaction. For House Paint, Order No. **DC-100**, per gal. **\$1.27**
For Best Barn Paint, **64c**



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